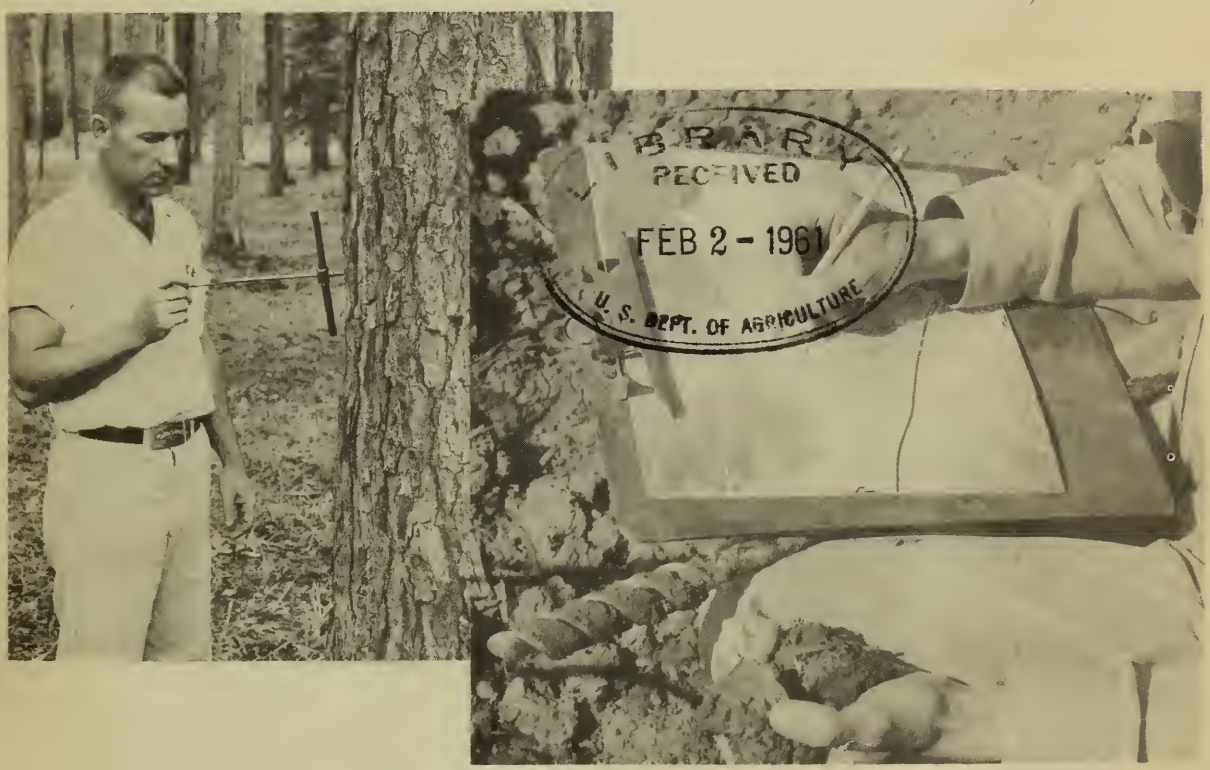
SOIL SURVEY INTERPRETATIONS FOR WOODLAND CONSERVATION

Forested Coastal Plain

Western Louisiana

PROGRESS REPORT



UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

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SOIL SURVEY INTERPRETATIONS FOR WOODLAND CONSERVATION -- FORESTED COASTAL PLAIN, WESTERN LOUISIANA -- A PROGRESS REPORT

By

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Contents

1/ Loftin and Chaffin are soil scientists; Clark, Holcombe, and Fallin are woodland conservationists, all with the U. S. Department of Agriculture, Soil Conservation Service, in Louisiana.

Acknowledgement: The authors are indebted to Dr. Paul E. Lemmon, Soil-Woodland Specialist, U. S. Department of Agriculture, Soil Conservation Service, Washington, D. C., who assisted in analyzing the data and presenting the results.

M-32-FTW-59

SOIL SURVEY INTERPRETATIONS FOR WOODLAND CONSERVATION -- FORESTED COASTAL PLAIN, WESTERN LOUISIANA--A PROGRESS REPORT

INTRODUCTION

There are many different kinds of soil. Research information and experience have shown that these may differ in their ability to produce wood or other crops. Management treatments required for the most economic crop production likewise differ with soils. A soil survey, including a soil map and adequate soil interpretations, provides information useful in making alternative choices of soils, crops, and practices. The map shows where each different kind of soil is located. Complete soil descriptions tell about the physical and chemical characteristics of the soils. Interpretive information explains how well each soil is suited to the production of different adapted crops, including wood crops, and points out special problems to consider in keeping soils continuously productive.

The Soil Conservation Service, working with locally organized and governed Soil Conservation Districts, provides soil and water conservation technical assistance to landowners. This includes the furnishing of a soil map for each ownership, together with interpretive information. Assistance is furnished in planning the best use of the land for different purposes, along with assistance in selecting and applying the best combination of conservation practices.

In recent years, more and more soils of the Forested Coastal Plain of Western Louisiana, have been devoted to wood crop production. Soils marginal for cultivated crops have been converted to profitable use by this means. Technologies of "woodland conservation", as it is now being called, have received increased attention. A demand has arisen for more and better soils information to facilitate this growing agricultural enterprise. To meet these needs, the Soil Conservation Service has amplified its efforts to improve soil surveys and interpretations of them.

Much less general knowledge exists on how soils influence the use and management of soils for wood crop production than for cultivated crops. This is natural because of the tenure of interest between the two types of soil use. Studies have been under way by the Soil Conservation Service in Louisiana since 1948 to determine more about the relationships of soil to woodland use and management. This report summarizes information obtained to date for four important pine species, loblolly, shortleaf, longleaf, and slash, in the Forested Coastal Plain area in the Western portion of the State. Interpretations are presented so that soil survey information can be made more useful in land-use planning and in woodland conservation.

DESCRIPTION OF THE AREA

The Forested Coastal Plain Area includes all the Western portion of the State with the exception of the Red River Valley (figure 1). The area includes approximately 10,650,000 acres and is generally referred to as the hill-land section of the State.

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The major forest types of this area are loblolly-shortleaf pine, longleaf-slash pine, and oak-pine (figure 2). All of the area was in woods before the first settlers moved in and started clearing land. At the present time approximately 75% is in woods. The remaining 25% is being devoted to pasture, cultivated crops, or is idle. For about the last 20 years the trend has been for the open land to be converted back to woods.

The Forested Coastal Plain is dominately marine terraces of the Tertiary age with minor portions being terraces of the Pleistocene age. The highest elevation is 535 feet above sea level and the lowest approximately 100 feet. The drainage pattern is generally to the south being effected through the Ouachita, Little, Red, Sabine, and Calcasieu Rivers. The topography is dominantly rolling with the exception of the Pleistocene terraces which have areas that are relatively flat.

The soils are moderately to strongly acid in reaction with the exception of small isolated spots that are alkaline. Base saturation is generally low and usually decreases with depth. Inherent fertility is considered low and soils require complete fertilizers for cultivated crops. Surface textures are dominantly sandy. Available moisture holding capabilities are fairly low.

The average frost free period ranges from 230 days in the north to 252 in the southern portion. Warm season rainfall (April - September inclusive) ranges from 28 inches in the extreme southern to 22 inches in the northern portion (figure 3). Total rainfall ranges from 46 inches in the northwest to 58 inches in the southeast portion of the area (figure 4.)

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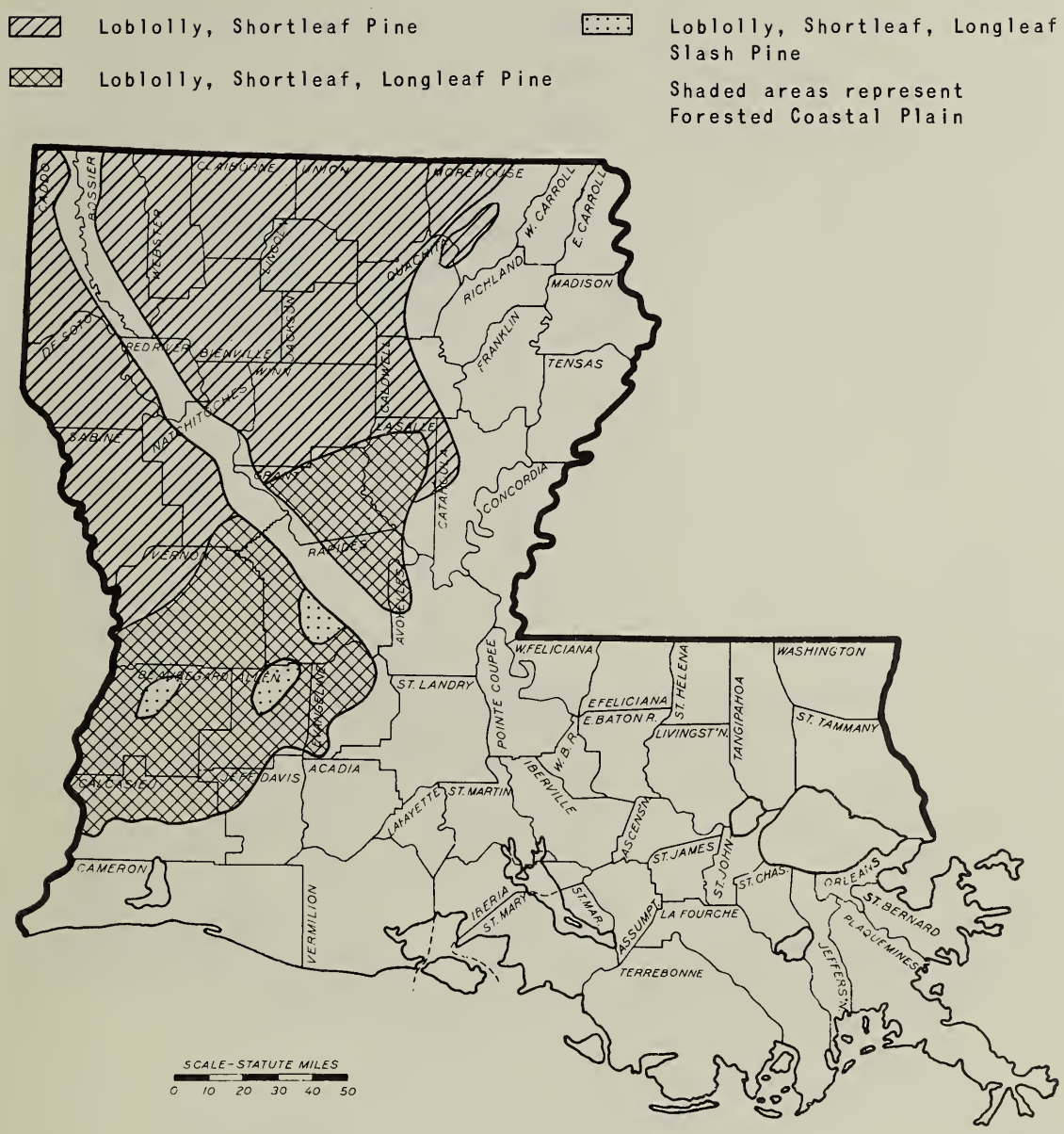

Figure 1

FORESTED COASTAL PLAIN OF WESTERN LOUISIANA

U. S. DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

ALEXANDRIA, LOUISIANA

10-59 4-L-13827

LEGEND

- Loblolly-shortleaf pine
- Longleaf-slash pine
- Oak-pine
- Oak-hickory
- Oak-gum-cypress
- Non-typed; less than 10% forest

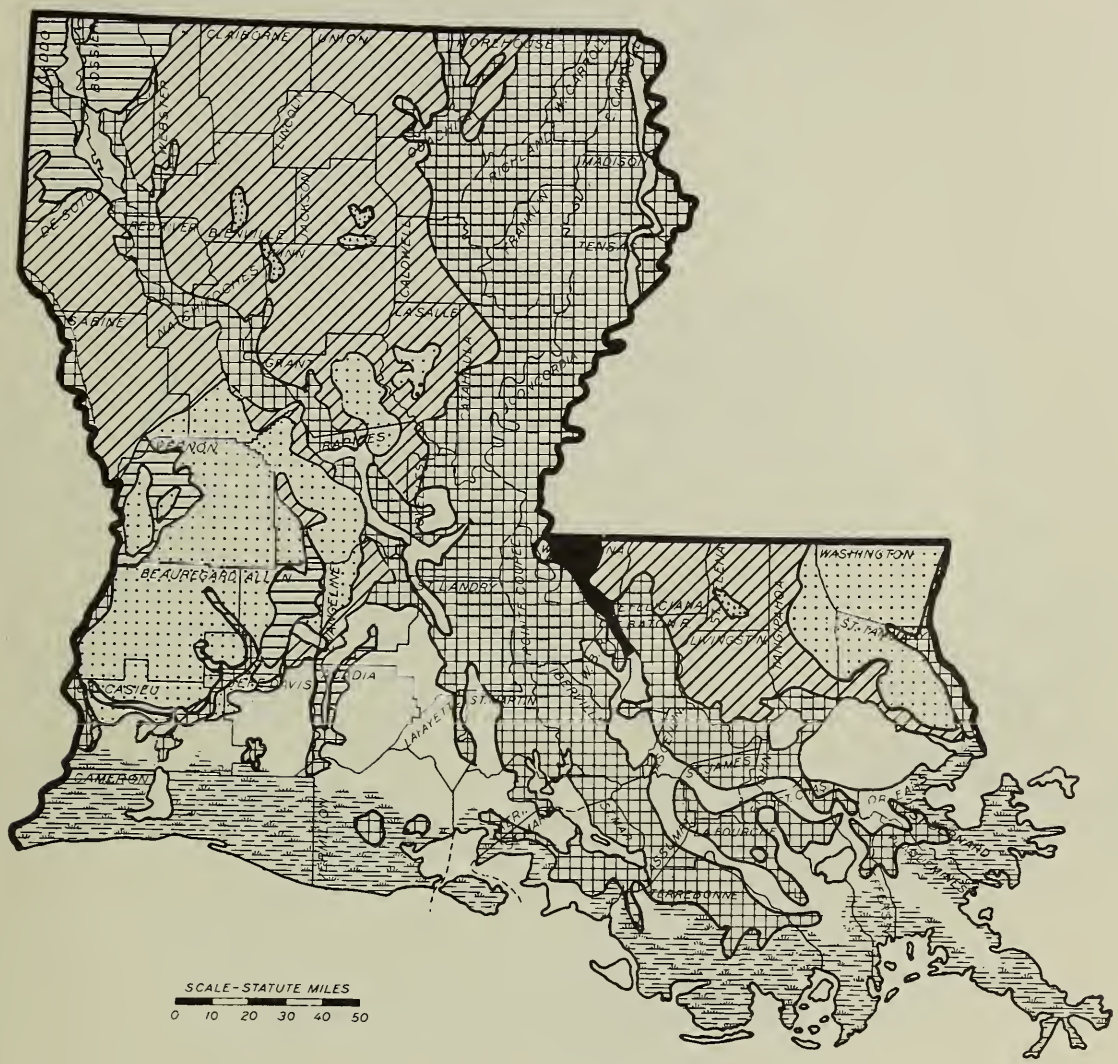

Figure 2

MAJOR FOREST TYPES IN LOUISIANA

(FOREST SURVEY RELEASE 75, SOUTHERN FOREST EXPERIMENT STATION, NEW ORLEANS, LOUISIANA)

U. S. DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

ALEXANDRIA, LOUISIANA

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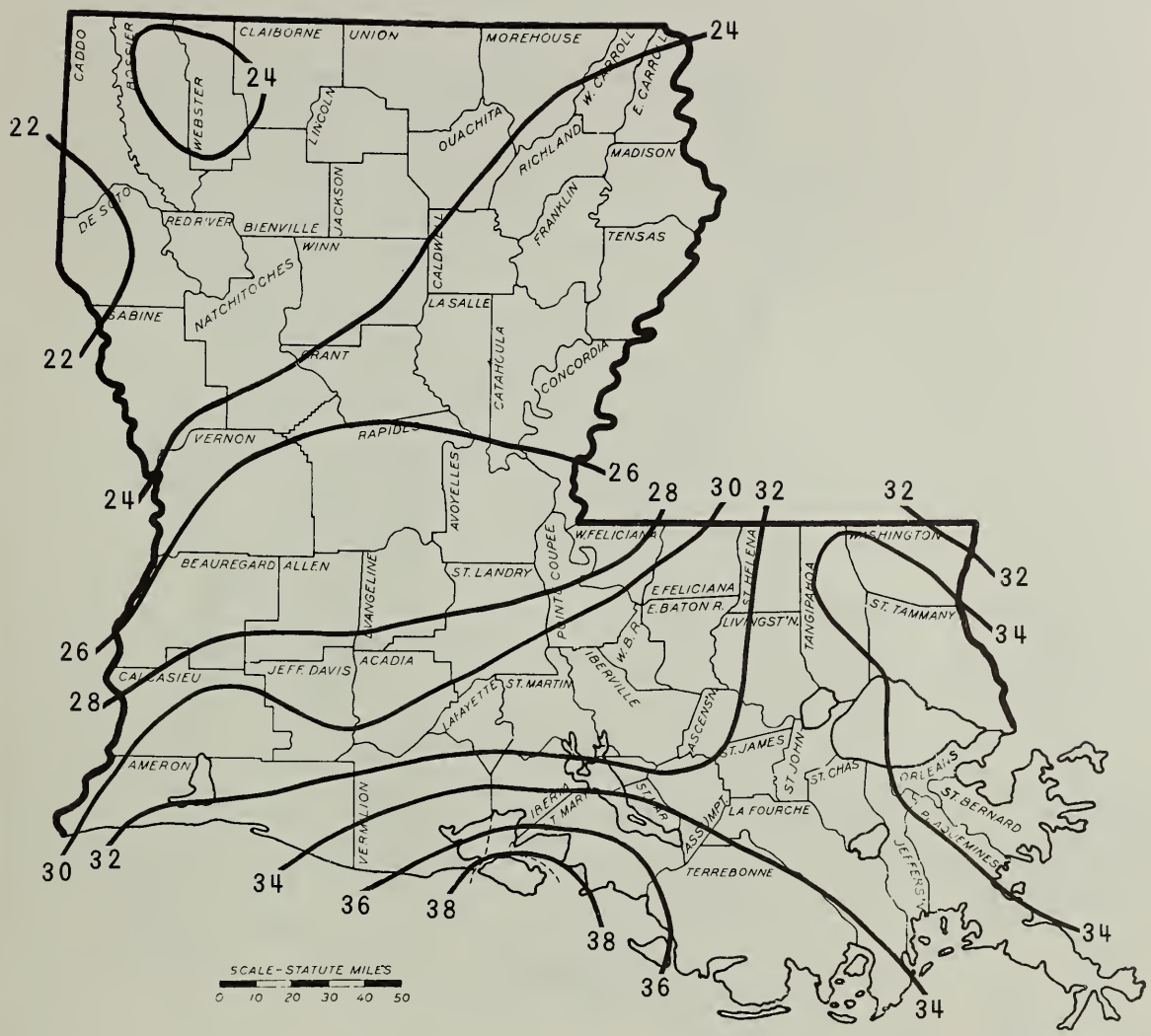

Figure 3

AVERAGE WARM-SEASON PRECIPITATION (INCHES)
LOUISIANA
(APRIL - SEPTEMBER INCLUSIVE)

FROM U. S. DEPARTMENT OF AGRICULTURE YEARBOOK 1941 "CLIMATE AND MAN"

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ALEXANDRIA, LOUISIANA

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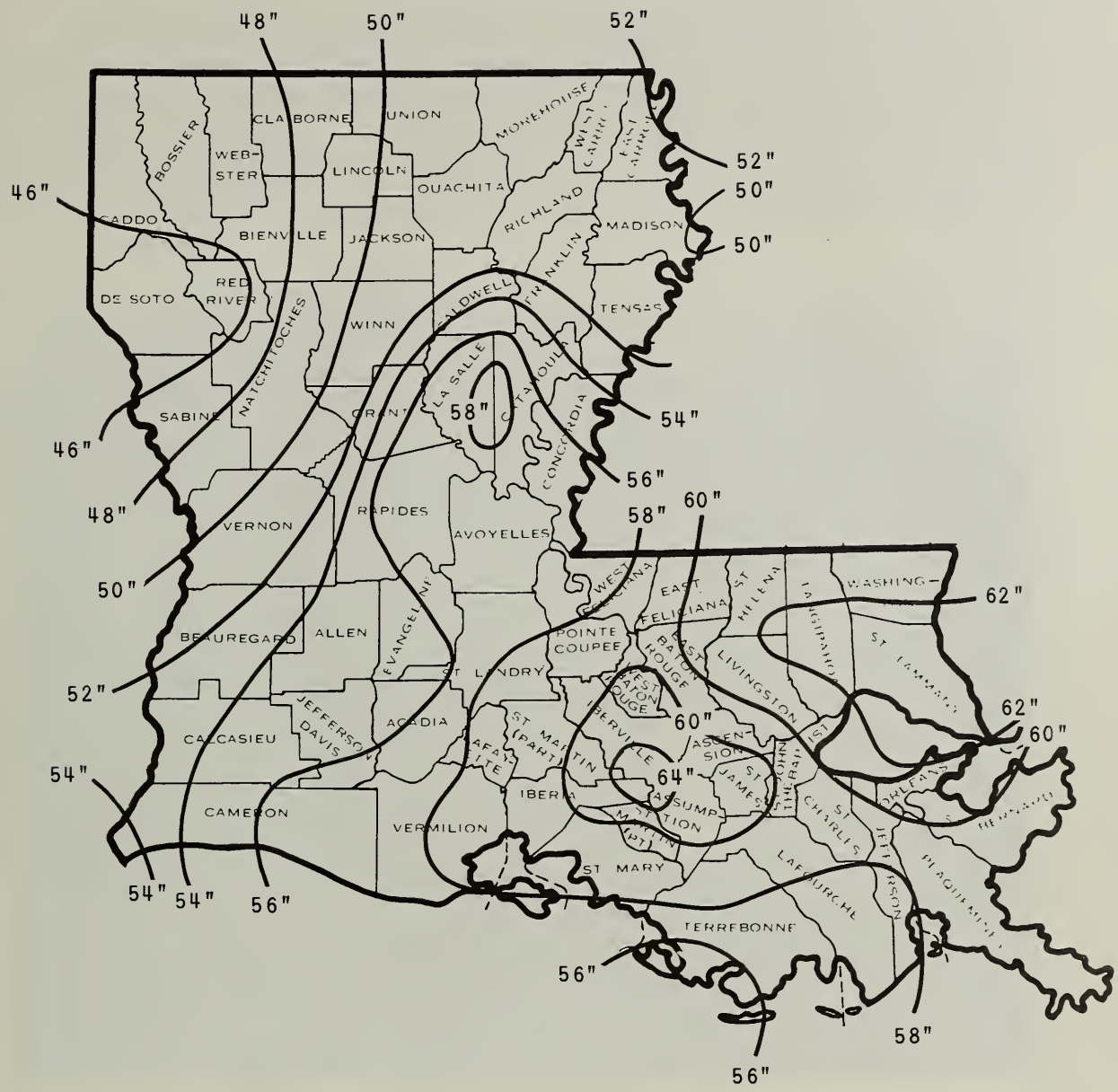

Figure 4

AVERAGE ANNUAL RAINFALL FOR LOUISIANA

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
ALEXANDRIA, LOUISIANA

SOURCE OF DATA: U.S.W.B. Climatological Data through 1953
Only stations with 30 yrs. or more of record used.

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PREVIOUS RELATED WORK

Many studies have been reported, especially during the past ten years, concerning relationships between soils and the growth of trees. Some of those studies apply directly to the species and area included in the present report. A brief review of these papers is included in the following paragraphs. No attempt is made to give a complete literature review. Readers are referred to the original papers and to more complete literature sources that are adequately referenced in them.

Figure 5 -- Gravelly phase soils have a lower site index than normal soils. This is Kirvin gravelly fine sandy loam, soil unit 6d, and has an average site index of 75 for loblolly pine.

Zahner, 1954, 1957, 1957a and 1958, studying 206 Shortleaf and Loblolly pine stands in Southern Arkansas and Northern Louisiana, found, by detailed statistical analyses, that site index is closely related to three site factors: (1) surface soil thickness and texture, (2) subsoil texture, and (3) slope. The surface soil thickness correlated directly with increasing site index to a maximum of 18 inches after which site quality decreased slightly. Site index increased with increasing amounts of silt in the surface 6 to 12 inches on soils that were classed as "azonal". Subsoil texture was correlated with site index. Site index increased as amount of fine

M-32-FTW-59

materials in the subsoil increased from sandy loams to clay loams. Friable clay loam subsoils showed maximum site index but plastic clay and silty clay subsoils are poor sites. Site index decreased as slope percent increased on the soils of the uplands. Zahner's studies represent basic research helpful in establishing meaningful soil mapping units for use in woodland conservation.

McClurkin (1953) studying soil and climatic factors related to the growth of longleaf pine in Louisiana, Mississippi, and Texas concluded that site quality could be predicted by knowing the amount of rainfall that a site receives during the first six months of the year and the depth to the least permeable horizon in the soil. He recognized the difficulty of determining the least permeable horizon in a soil.

Turner (1936, 1937, 1938) studied 222 one-quarter and one-half acre plots in shortleaf and loblolly pine stands in Ashley, Columbia, Bradley, and Howard Counties of Arkansas, all in the Forested Coastal Plain Area. He determined site index and rate of volume growth on 22 soil types and has presented detailed information. The results are discussed by site quality groupings of soils - six site classes being recognized for Loblolly and four for Shortleaf pine. Turner used earlier published county soil surveys (Ashley Co. 1914; Columbia Co. 1916; Howard Co. 1919; Bradley Co. 1925) as a basis for identifying soils in the field. Samples of soil were collected and analyzed in the laboratory. In order to group plot information so that like site quality would be shown, it was necessary for the author to recognize soil phases not included in the county soil survey. Some of the plots were located on transitional zones between recognized soil types and they have been so designated. The need for recognizing phases, not shown on soil mapping at the time, indicates that the mapping units were too broad to provide the necessary control for practical woodland conservation. Therefore, this excellent work of Turner's, among the first to be published about woodland soil relationships in the United States, has not been adequately extended into practical use. Soil mapping units have been improved and refined in recent years and current soil mapping is providing the necessary basis for better woodland conservation. (see figure 6)

Smith (1939) in his study of the control of the Texas leaf cutting (town) ant in Louisiana concluded that this ant shows a distinct preference for well drained very sandy soils and that their sporadic distribution was controlled by soil type, topography (including drainage) and exposure. Several specific soils are indicated as being especially favorable habitats for these ants.

Chandler et al (1943) reports studies on fourteen, mostly one-acre, plots of shortleaf and loblolly pine stands in Polk, Tyler, Angelina, and Nacogdoches Counties, Texas. These studies sample the Eastern Texas Pine Belt, an area similar to that included in this report. The average site indexes obtained agree essentially with those reported in this paper for like soil units found in Louisiana.

M-32.FTW.59

Figure 6 -- Soils influence forest regeneration. This is a 7 year old planting of loblolly pine. The soil in the foreground is Morse clay, soil unit 1f. In the background Red Bayou fine sandy loam, soil unit 7, has resulted in far less seedling mortality and growth is better.

COLLECTION OF INFORMATION

Field work, on which this report is based, was completed during 1955 and 1956. It consisted of a study of temporary undelineated plot locations. Complete information for each plot was recorded on especially designed forms. The sampling, including 213 plots of loblolly, 115 plots of shortleaf, 51 plots of longleaf and 13 plots of slash pine, covered, fairly well, certain geographical areas of the state, figure 1. Detailed information about the location of these plots is on file in the State Office of the Soil Conservation Service at Alexandria, Louisiana.

Plots were located by soil scientists and woodland conservationists working together. They drove along roads to locate forest stands that appeared suitable for site index determinations. Each area was examined in detail before final selection. Soils over a prospective plot area were examined by spade or auger to identify the soil unit and to make certain of uniformity. All plots were identified in terms of Soil Conservation Survey mapping units. These units represent groupings of soils according to the most important soil characteristics and formed the basis of soil mapping at the time this work was done.

M-32-FtW-59

The soils were also identified and later named in accordance with national standards.

Every effort was made to select only plots that were well within the central concept of a soil. Old logging roads, farmstead sites, disturbed areas, seeps and abnormally drained areas were avoided. Records were made of such things as: texture of the surface soil, profile permeability, degree of internal drainage, gravel, soil reaction, slope and erosion classes, thickness of surface soil, texture of both the subsoil and of the substratum, and depth to conspicuous mottling in some cases.

Figure 7 -- Soils influence site quality. This shows a stand of longleaf and shortleaf pine on Sumter clay, soil unit 1f. Average site index on this soil is 45 for longleaf pine and 50 for shortleaf. This is a poor soil for pine production.

Only well-stocked, even-aged, normal appearing forest stands, 30 years of age and older, were selected. These were naturally occurring stands, except for the slash pine plots. Because some stands had received management (cutting and thinning) it was necessary to determine that the cutting had not removed the dominant or codominant trees before a plot was accepted for measurement. One to five (usually three) dominant and codominant trees were measured on each plot. Measurements included: total tree heights to the nearest foot with

Abney level and tape; ring counts by increment borings at breast height to determine age (total age was obtained by adding three years in the case of shortleaf, loblolly and slash pine, and seven years for longleaf pine); and diameter at breast height measured with a diameter tape. Any abnormalities in tree growth, as evidenced by core examination, disqualified the tree from the records. Site index was determined for each tree separately and the average for all trees measured on a plot was also determined. Site index classifications in U.S.D.A. Misc. Publication 50 were used for longleaf pine and revised information by Coile and Schumacher, 1953, was used for the other species.

In addition to soil and tree information other items were observed on each plot and recorded. This included such things as physiography, plot position on the slope, forest stand origin, previous land use, stand density, and understory density. General comments were included to record special items for each plot thought to be important.

The criteria used for assessing items measured and the manner of recording the information is explained further in the appendix.

POTENTIAL SOIL PRODUCTIVITY

Each different kind of soil may be characterised by its potential productivity for a specified crop under a stipulated kind of management. Foresters use site index to assess this soil quality for woodcrops. Site index, the average height of the dominant and codominant stand at 50 years of age, is obtained from site index curves based on measurements of age and height of selected trees in existing stands that qualify for measurements. To qualify, a stand must represent the kind of woodcrop for which productivity is being sought. This may be a single species or a recognized forest cover type. In the work reported, stands measured were well-stocked, even-aged, and under normal growing conditions not appreciably affected by such factors as management, fire, insects, diseases, livestock, or wildlife uses, etc.

Site index is a relative or qualitative indication of productivity based on the height growth of trees. It has been correlated with volume yields (Office of Forest Experiment Stations, 1929) and can be converted into quantitative predictions of potential growth and yield by reference to published yield tables. Such quantitative soil productivity information provides a basis for judging the economic feasibility of woodland conservation measures. (see figure 8)

Plot samples to determine site index for different kinds of soil did not cover all mapping units that have been used in soil surveys of the Forested Coastal Plain Area. Some extrapolation was therefore needed to supply missing information. Published research, local experience, research in progress, and site index measurements made in this study all played a part in arriving at the best extrapolations possible. Some of the steps taken to provide this missing information are described in the following paragraphs.

M-32-FTW-59

Figure 8 -- A profile view of Eustis loamy fine sand, soil unit 13. This sandy soil is low in moisture supplying capacity which usually results in poor forest regeneration.

Simple correlations between average site index and such recorded items as wetness, erosion class, slope percentage, slope position, texture and thickness of various soil layers, total and growing-season precipitation and the length of the frost-free period were tried. No attempt was made to make complete statistical analyses of these data. This is planned when like information from the same natural areas in adjacent states can be included. From the simple correlations tried, it was not possible to furnish substantial proof of the influence of most of these individual habitat characteristics. It was decided therefore to ignore such influences as may have been caused by these individual factors and use average site index values for all plots measured within each (Soil Conservation Survey) soil mapping unit.

Accordingly all mapping units in the area were placed into thirty-three groups based on the physical and chemical characteristics thought to be of most influence in affecting tree growth,

M-32-FTW-59

appendix table 5. Soils that were sampled in each group are shown, together with the number of plots for each species on each soil. The average site index for all soils that were sampled in each group is assumed to represent all mapping units within each group. (The values thus supplied have been clearly indicated in appendix table 5.)

Recent studies show that the growth rate of slash pine in the southeastern portion of the state is very similar to that for natural stands of loblolly pine. Since only a limited number of slash pine plots were measured, and these taken from planted stands, it was assumed that site index values developed from loblolly pine could be used equally well for slash.

This report presents the best available potential soil productivity information for all soil mapping units in the Forested Coastal Plain Area. (To assist woodland owners, make the best alternative choices of soils, species, and practices for soils as they are encountered in planning.)

WOODLAND SUITABILITY GROUPINGS OF SOILS -- interpretations for Woodland Conservation

In addition to potential productivity, soils influence many items of woodland use and management, for instance; regeneration potential (seedling mortality) - the ease with which seedlings can develop and become established when the original stand is harvested or otherwise removed; plant competition - the brush encroachment hazard that may limit or inhibit the growth of desired tree species following fire or harvest; equipment limitations (trafficability) - the limitations in use of equipment during planting, wood crop tending or tree harvesting; erosion hazard - problems of controlling undesirable soil erosion during certain phases of wood crop rotation or in connection with certain operations such as seedbed preparation, planting, harvesting, construction and maintenance of firelanes, skid-trails, etc.; hazards from forest pests - for example, problems of controlling the Texas leaf cutting ant, gophers, etc.; and perhaps other items for which information is not currently available. (see figure 9)

A system of rating soils for growing wood crops using these soil-related items important to woodland conservation has been developed. Ratings are made to indicate alternative choices among species and practices by soils. The choices thus indicated are consistent with the degree or intensity of the soil capability, problem, limitation, or hazard under consideration. Criteria used for rating soils in this way are summarized in the appendix.

Ratings were developed for groups of soil mapping units based on experience and judgment, guided by research when this was available. Local personnel most faimilar with the soils and forests made the ratings. It should be recognized that these are interpretations--the best information presently available. As more information and experience is gained there are sure to be some improvements.

M-32-FTW-59

Figure 9 -- Texas leaf cutting (town) ants are found mainly on well drained, sandy soils with south and west exposures. These insects are a serious hazard to young stands and control measures must often be taken to assure adequate regeneration.

The same grouping of soil mapping units used to summarize potential soil productivity (site index ratings) was used for rating the other items of growth and management (appendix table 5). Upon examining the resulting "rating chart" it was obvious that some of the thirty-three groups were uniform enough in the ratings that they could be placed together. This reassembling of soils into groups based on the ratings and upon complete knowledge of soil characteristics has resulted in those presented in Table 1. These are called WOODLAND GROUPINGS OF SOILS because they summarize the best known information about how well soils are suited to woodcrop production. The ratings shown for each of these suitability groups are the basis for soil interpretations needed in woodland conservation. Each woodland suitability group is discussed in more detail in the following paragraphs. More complete information on potential soil productivity, interpreted from normal yield tables by site index classes is found in appendix tables for the four species of pines included in this report.

M-32-FTW-59

TABLE 1 - Woodland Suitability Grouping of Soils for the Forested Coastal Plain of Western Louisiana

Group No.	Soil Types and Phases 1/	Soil Unit Symbols 2/	Average Site Index 3/			Plant Competition	Seedling 5/ Mortality		Forest Pest	Equipment Limitation	Erosion Hazard
			Lob. 4/ & Slash	Short.	Long.		Natural	Planted			
1	Iuka sil	8a1	105	-	-	severe	slight to mod.	slight to mod.	slight	mod. to severe	slight
	Iuka sil, overflow phase	8a1b									
	Iuka vfsl	8a1									
	Iuka vfsl, overflow phase	8a1b									
	Iuka sl, overflow phase	8a1b									
	Hannahatchie fsl	9									
	Hannahatchie fsl, overflow phase	9b									
	Mantachie sil	8a1									
	Mantachie sil, overflow phase	8a1b									
	Mantachie vfsl	8a1									
	Mantachie vfsl, overflow phase	8a1b									
	Ochlockonee sil, overflow phase	8b,9b									
	Ochlockonee vfsl	8,9									
	Ochlockonee vfsl, overflow phase	8b,9b									
	Ochlockonee fsl	8,9									
	Ochlockonee fsl, overflow phase	8b,9b									
2	Bibb sil	8a	100	-	-	severe	severe	severe	slight	severe	slight
	Bibb sil, overflow phase	8ab									
	Wet Alluvial land	33									
3	Cahaba fsl	7	90	80	75	mod.	slight to mod.	mod.	severe	slight to severe	slight to mod.
	Cahaba sl	7X									
	Dougherty fsl	7									
	Kalmia vfsl	7									
	Kalmia fsl	7									
	Luverne fsl	7									
	Norfolk sl	7X									
	Orangeburg fsl	7									
	Orangeburg sl	7									
	Orangeburg lfs	12									
	*Red Bayou (Cahaba) fsl	7									
	Ruston vfsl	7									
	Ruston fsl	7									
	Ruston sl	7									
	Ruston sl, thick surface phase	7X									
	Ruston lfs	12									
	Ruston lfs, thick surface phase	12									
	*Vian (Cahaba) fsl	7									
	*Vian (Cahaba) sl	7X									

M.32-FtW.59

TABLE 1 (Cont'd) - Woodland Suitability Grouping of Soils for the Forested Coastal Plain of Western Louisiana

Group No.	Soil Types and Phases 1/	Soil Unit Symbols 2/	Average Site Index 3/			Plant Competition	Seedling 5/ Mortality		Forest Pest	Equipment Limitation	Erosion Hazard
			Lob. 4/ & Slash	Short.	Long.		Natural	Planted			
4	Beauregard sil	6a1	90	80	65	severe	slight to mod.	slight to mod.	slight	mod.	slight
	Beauregard vfsl	6a1									
	Beauregard lfs	11a1									
	Caddo sil	6a									
	Caddo sil, depression phase	M6a									
	Caddo vfsl	6a									
	Myatt sil, thick surface phase	M6a									
	Prentiss vfsl	6a1									
	*Sarepta (Stough) sil	6a1									
	Stough sil	6a1									
	Stough vfsl	6a1									
5	Bowie sil	6	85	75	75	mod.	slight	slight	mod.	slight to severe	slight to mod.
	Bowie vfsl	6									
	Bowie fsl	6									
	Bowie sl	6									
	Gilead sl	6									
	Gilead lfs	11									
	Kirvin fsl	6									
	Kirvin sl	6									
	Lexington sil	6									
	Luverne gfsl	7d									
	Ora fsl	6									
	Ora sl	6									
	Ora sl, thick surface phase	6									
	Providence sil	6									
	Ruston fsl, heavy subsoil phase	6									
	Ruston gfsl	7d									
	Savannah fsl	6									
	Shubuta vfsl	6									
	Shubuta fsl	6									
	Shubuta sl	6									
	Shubuta sl, thick surface phase	6									
	Tilden fsl	6									
	Vaucluse sl	6									
	Vaucluse lfs	11									
6	Eustis lfs	13	80	80	70	slight	mod. to severe	severe	severe	mod. to severe	slight to severe
	Independence lfs	13									
	Lakeland lfs	13									

M-32-FTW-59

TABLE 1 (Cont'd) - Woodland Suitability Grouping of Soils for the Forested Coastal Plain of Western Louisiana

Group No.	Soil Types and Phases 1/	Soil Unit Symbols 2/	Average Site Index 3/			Plant Competition	Seedling 5/ Mortality		Forest Pest	Equipment Limitation	Erosion Hazard
			Lob. 4/ & Slash	Short.	Long.		Natural	Planted			
7	Acadia sil Acadia vfsl *Almont (Acadia) sil Pheba vfsl *Summerfield sil *Summerfield vfsl *Summerfield sl *Summerfield lfs	5al 5al 5al 5al 5al 5al 5al 10al	80	75	70	severe	slight to mod.	slight to mod.	slight	mod.	slight
8	Cuthbert fsl Boswell vfsl Boswell fsl *Gore sil *Gore vfsl Hortman vfsl *McKamie vfsl Muskogee vfsl Sawyer vfsl Sawyer fsl Sawyer lfs Susquehanna sicl Susquehanna sil Susquehanna vfsl Susquehanna fsl	L5 5 5 L5 L5 5 5 5 5 5 10 L5 L5 L5 L5	75	70	60	mod.	slight	slight to mod.	slight	mod. to severe	mod. to severe
9	*Mashulaville sil *Mashulaville vfsl Myatt sil *Oberlin sil Wrightsville sic Wrightsville sil	5a 5a 5a 5a 5a 5a	75	65	-	severe	mod. to severe	mod. to severe	slight	severe	slight
10	Boswell gfsl Kirvin gfsl Nacogdoches gfsl Shubuta gfsl	5d 6d 6d 6d	75	65	-	mod.	slight	mod.	slight	mod. to severe	slight to mod.
11	Lakeland ls	130	70	70	60	slight	severe	severe	severe	mod. to severe	slight to severe

M-32-FtW-59

TABLE 1 (Cont'd) - Woodland Suitability Grouping of Soils for the Forested Coastal Plain of Western Louisiana

Group No.	Soil Types and Phases 1/	Soil Unit Symbols 2/	Average Site Index 3/			Plant Competition	Seedling 5/ Mortality		Forest Pest	Equipment Limitation	Erosion Hazard
			Lob. 4/ & Slash	Short.	Long.		Natural	Planted			
12	*Gore c Hunt c *McKamie c Susquehanna c Vaiden c	1 01 1 1 1	75	65	60	mod.	mod.	severe	slight	severe	mod. to severe
13	Binnsville c Houston Black c *Kisatchie c *Kisatchie soils Morse c Natchitoches c Sumter c	01b 01b 24 25 1b 1b 1b	60	50	45	severe	severe	severe	slight	severe	severe

1/ Includes all slope and erosion phases. (For use with standard soil surveys and those made between 1935 and 1942) Texture abbreviations used are as follows:

c - clay
sic - silty clay
sil - silt loam
vfsl - very fine sandy loam
fsl - fine sandy loam
sl - sandy loam
lfs - loamy fine sand
ls - loamy sand
gfsl - gravelly fine sandy loam

2/ Includes all slope and erosion phases. (These are the Soil Conservation Survey soil mapping symbols used since 1942)

3/ Potential soil productivity - average site index. Site index ratings are weighted averages from soil groups shown in Appendix Table 5, rounded off to the nearest multiple of five.

4/ These ratings are for Loblolly pine. It is assumed that they represent a close approximation for slash pine.

5/ Shortleaf pine not generally planted; therefore, it is not included in planted ratings.

* Tentative soil series - those names in parentheses are the suggested names pending final correlation.

- Species not generally found on these soils.

M.32.FTW.50

WOODLAND SUITABILITY GROUP 1

These are the better drained bottomland (alluvial) soils. They may be subject to damaging overflows.

The average site index for loblolly and slash pine is 105. Shortleaf and longleaf pines are generally not found on these soils.

The degree of plant competition from brush and other plants following the removal of overstory is considered somewhat severe. Natural regeneration cannot be relied upon to provide adequate restocking of designated species. Special management and site preparation treatment are necessary, such as land clearing, controlled burning, use of chemical sprays, girdling, tree planting with replanting as needed, etc., to assure fully stocked stands.

Figure 10 -- Loblolly pine growing on Ruston fine sandy loam, soil unit 7. This soil has an average site index of 90 for this species. The stand has been thinned to give adequate space for the selected trees to grow until the next periodic thinning.

Mortality of both planted and natural seedlings during the first few years, when plant competition is controlled, is rated as slight to

M-32-FTW-59

moderate. Mortality is largely due to overflows. Mortality will vary according to the depth of water and the length of overflow period. Satisfactory restocking from initial planting can be expected 3 to 4 years out of 5. Replanting to fill in openings is sometimes necessary. Natural regeneration cannot always be relied upon for adequate and immediate restocking, because of the overflow hazard, especially on the overflow phases.

Forest pests related to soils are of no special significance on any of the members of this group.

Equipment limitations are rated as moderate on the well drained soils, and severe on the imperfectly drained soils in this group. This limitation is due principally to the factor of wetness and overflow.

Damage to soil structure and stability and to tree roots may result if equipment is used on these soils during the wetter periods of the year.

There are no problems of soil erosion on this group of soils when the woodlands are managed according to currently acceptable standards.

WOODLAND SUITABILITY GROUP 2

These are the poorly drained bottomland (alluvial) soils. They are usually subject to damaging overflows.

The average site index for loblolly and slash pine is 100. Shortleaf and longleaf pines are generally not suited to these soils.

The degree of plant competition from brush and other plants following the removal of overstory is considered somewhat severe. Natural regeneration cannot be relied upon to provide adequate restocking of designated species. Special management and site preparation treatments are necessary, such as land clearing, controlled burning, use of chemical sprays, girdling, tree planting with replanting as needed, etc., to assure fully stocked stands.

Mortality of both planted and natural seedlings during the first few years, with plant competition controlled, is rated as severe. This is due largely to poor drainage and overflow hazard. Natural regeneration cannot, therefore, be relied upon. Satisfactory restocking from initial planting can be expected only about 2 years out of 5. In some cases water control may be necessary before stands can be established. Considerable replanting may be necessary to assure adequate and immediate restocking. Special seedbed preparation, superior planting techniques and use of high quality planting stock are advisable to assure adequate and immediate restocking of these soils.

M-32-FTW-59

Forest pests related to soil influences are of no special consideration on soils in this group.

Equipment limitations are considered somewhat severe. This is due to wetness of these soils and overflow hazard. Damage to soil structure and stability and injury to tree roots may result if equipment is used on these soils during the wetter periods of the year. High quality roads and trails are required in order to operate equipment effectively.

There are no problems of soil erosion on this group of soils when the woodlands are managed according to currently acceptable standards.

WOODLAND SUITABILITY GROUP 3

These are the well drained soils with moderately sandy subsoils.

The average site index for loblolly and slash is 90, for shortleaf 80, and for longleaf 75.

The degree of plant competition from brush and other plants following the removal of overstory is considered moderate. Competition develops on these soils but will not ordinarily prevent adequate stand establishment of the designated species. Establishment may be delayed and initial growth rate slowed. Some site preparation may be necessary in order to establish an adequate stand without delay.

Mortality of both planted and natural seedlings during first few years, with plant competition controlled, is rated as moderate with the exception of natural seedings of longleaf pine which is rated slight. Satisfactory restocking by initial planting (direct seeding for longleaf) can be expected 3 years out of 5. Some replanting may be necessary to fill in openings. Seedbed preparations may be advisable to assure a higher probability of adequate and immediate restocking by initial planting. Natural regeneration of loblolly and shortleaf cannot always be relied upon and special treatment measures may be advisable to assure adequate and immediate restocking. Natural regeneration can generally be relied upon for longleaf under proper silvicultural conditions.

Forest pests in the form of gophers and town ants may cause severe mortality and/or damage if they are present. Pest control may be necessary before planting.

There are no special equipment limitations on the soils in this group except for those with slopes greater than 8 percent. This limitation is considered moderate for soils where slopes vary from 8 to 12 percent and severe where slopes exceed this amount. Operating tree planting and other types of equipment needs to be planned with these limitations in mind. High quality roads, skid-trails and landings must be constructed and attention given to their maintenance on the steeper slopes.

M-32-FTW-59

Erosion hazard is considered slight on all mapping units where slope is less than 8 percent. On slopes above 8 percent, erosion hazard is rated as moderate and special techniques of construction and maintenance of roads, skid trails, landings, and fire lanes need to be considered in woodland planning.

WOODLAND SUITABILITY GROUP 4

These are poorly to imperfectly drained soils without heavy clays in the subsoil.

The average site index for loblolly and slash is 90, for shortleaf 80, and longleaf 65.

The degree of plant competition from brush and other plants following the removal of overstory is considered rather severe. Natural regeneration cannot be relied upon to provide adequate restocking of designated species. Special management and site preparation treatments are necessary, such as land clearing, controlled burning, use of chemical sprays, girdling, tree planting with replanting as needed, etc., to assure fully stocked stands.

Mortality of both planted and natural seedlings during the first few years, when plant competition is controlled, is rated as slight for loblolly and slash and moderate for longleaf and shortleaf pine. Ordinarily natural regeneration of loblolly pine will take place under proper silvicultural conditions. Natural regeneration of shortleaf and longleaf cannot always be relied upon and special treatment measures may be advisable to assure adequate and immediate restocking where these species are desired. Satisfactory restocking by initial planting would be expected 4 out of 5 years for loblolly and slash, 3 out of 5 years for longleaf. Some replanting can be expected to fill in openings even during the years of greatest success with longleaf.

Forest pests related to soils are of no special concern with this group of soils.

Equipment limitation is rated as moderate. This limitation is due principally to the factor of soil wetness. Wet periods up to 3 months duration may be expected. Damage to soil structure and stability, and to tree roots may occur if equipment is used during the restrictive periods. (see figure 11)

There are no special problems of soil erosion on this group of soils when the woodlands are managed according to currently acceptable standards.

Figure 11 - Damage to soil structure and stability, and to tree roots may occur if equipment is used during the wetter periods of the year on this soil. Soil unit 6a1 - Beauregard very fine sandy loam.

WOODLAND SUITABILITY GROUP 5

These are well drained soils with moderately heavy subsoils. Some gravelly phases are included.

Average site index for loblolly and slash is 85, for shortleaf 75, and for longleaf 75.

The degree of plant competition from brush and other plants following the removal of overstory is regarded as moderate. Competition develops on these soils but will not ordinarily prevent adequate stand establishment of the designated species. Establishment may be delayed and initial growth rate slowed. Some site preparation may be necessary in order to establish an adequate stand without delay.

Mortality of both planted and natural seedlings during the first few years, with plant competition controlled, is rated slight.

M-32-FTW-59

Ordinarily, adequate natural regeneration will take place when proper silvicultural requirements of these species exist. Satisfactory restocking by initial planting can be expected approximately 4 out of 5 years.

Figure 12 -- No special regeneration problem. Shubuta fine sandy loam, soil unit 6. Adequate natural regeneration of pine will take place under appropriate silvicultural conditions.

Pests, such as gophers and town ants, represent a moderate problem on these soils if they are present. Some replanting and/or pest control may be necessary to assure a fully stocked stand.

There are no special equipment limitations on this group of soils on slopes up to 8 percent. A moderate limitation exists on slopes of 8 to 12 percent, and it is considered severe on slopes above 12 percent. The problem is one of operating tree planting and other types of equipment on slopes, and the problem increases with slopes above 8 percent. The gravel of the gravelly phase soils interfere with tree planting equipment to a limited extent. High quality roads, skid trails and landings need to be constructed and attention given to their maintenance on the steeper slopes.

M-32-FTW-59

Slight erosion hazard exists on slopes up to 8 percent. On slopes above 8 percent, the erosion hazard is rated moderate. Road, trail, and fire lane construction require some special techniques on the steep slopes and maintenance is necessary.

WOODLAND SUITABILITY GROUP 6

These are the well drained very sandy soils with sandy subsoils. Average site index for loblolly and slash pine is 80, for shortleaf 80, and for longleaf 70.

The degree of plant competition from brush and other plants following the removal of overstory is regarded as slight. Invasion by undesirable species will usually only slightly impede natural regeneration and growth of designated species.

Mortality of planted seedlings during the first few years is rated as severe. Satisfactory restocking by initial planting can be expected only about 2 years out of 5. Arrangements for replanting to fill in important openings and to replant areas of near or complete failure need to be considered in planning. Mortality of natural regeneration is rated as moderate for shortleaf and longleaf, and severe for loblolly. This method of obtaining adequate restocking cannot always be relied upon. Some success may be expected with shortleaf and longleaf but special treatment measures are necessary. In general, for this group of soils, planting, with considerable replanting, special seedbed preparation, and superior planting techniques are necessary to assure adequate and immediate restocking.

Pests, such as gophers and especially town ants, can be expected to cause severe mortality and/or damage if they are present. Pest control is generally necessary before planting.

Equipment limitation is rated as moderate on slopes up to 8 percent and severe on slopes above this amount. The limitation is due principally to the factor of loose sands on the surface. The sand particles become easily detached during the dry periods of the year and reduce the traction needed for moving equipment. Planting seedlings on these coarse textured soils also involves some mechanical difficulties especially on the steeper slopes where it is difficult to operate tree planting and other types of equipment. High quality road, skid-trail and landing construction, and costly maintenance are usually necessary.

On slopes up to 5 percent there is no special erosion problem. A moderate erosion hazard exists mainly in the form of gully erosion on slopes of 5 to 10 percent and it is considered severe on slopes above 10 percent. Road, skid-trail, fire lane construction, and maintenance require special management techniques to prevent loss due to soil erosion on the steeper slopes.

WOODLAND SUITABILITY GROUP 7

These are the imperfectly drained soils with heavy clay subsoils.

M-32-FTW-59

The average site index for loblolly and slash pine is 80, for shortleaf 75, and for longleaf 70.

The degree of plant competition from brush and other plants following the removal of overstory is regarded as severe. Natural regeneration cannot be relied upon to provide adequate restocking of designated species. Special management and site preparation treatments are necessary, such as land clearing, controlled burning, use of chemical sprays, girdling, tree planting with replanting as needed, etc.

Figure 13 -- Soil unit 5a1. Acadia silt loam. Plant competition can be a severe problem.

Seedling mortality, both planted and natural, during the first few years if plant competition is controlled, is rated as slight for loblolly and slash, and moderate for shortleaf and longleaf. Survival of natural regeneration of shortleaf and longleaf cannot always be relied upon, and some special treatment measures may be advisable to assure adequate and immediate restocking if this means of regeneration is chosen. Satisfactory restocking by initial planting would be expected 4 out of 5 years for loblolly and slash but only 3 out of 5 years for longleaf. Some replanting can therefore be expected to fill in openings in plantings of longleaf.

Natural regeneration of loblolly will ordinarily take place under proper silvicultural conditions.

Forest pests related to soils are of no special significance in this group.

Equipment limitation is rated as moderate. The limitation is due principally to the factor of soil wetness. Wet periods up to 3 months duration may be expected. Damage to soil structure and stability and to tree roots may occur if equipment is used during the restrictive period.

There are no special problems of soil erosion on this group of soils when the woodlands are managed according to currently acceptable standards.

WOODLAND SUITABILITY GROUP 8

These are the well drained soils with heavy clay subsoils.

The average site index for loblolly and slash is 75, for shortleaf 70, and for longleaf 60.

The degree of plant competition from brush and other plants following the removal of overstory is considered moderate. Competition develops on these soils but will not ordinarily prevent adequate stand establishment of the designated species. Establishment may be delayed and initial growth rate slowed thereby delaying the development of a fully stocked stand. Some site preparation may be necessary in order to establish an adequate stand without delay.

Mortality, of natural occurring seedlings during the first few years with plant competition controlled, is rated as slight. Ordinarily, adequate natural regeneration will take place under proper silvicultural conditions. For planted seedlings the mortality rating is slight for soils in mapping Unit 5 and satisfactory restocking by initial planting can be expected 4 out of 5 years. For the other soils in this group, the expected mortality of planted seedlings is rated as moderate and satisfactory restocking by initial planting can be expected 3 years out of 5. For the soils rated as "moderate", seedbed preparations may be advisable to assure a higher probability of adequate and immediate restocking by initial planting, and some replanting may be necessary to fill in openings.

Forest pests are no special problem on this group of soils.

Equipment limitation is due both to slope and to the presence of clay in the subsoil. The clay subsoil causes mechanical difficulties in equipment operation during wet weather due to its stickiness. Such equipment use injures tree roots, forms runoff channels and destroys soil structure. The limitation is considered moderate on slopes below 8 percent and severe on slopes greater than this. Road, skid-trail and landing construction,

M-32-FTW-59

and their maintenance need to be planned carefully with this limitation in mind especially on the steeper slopes.

Erosion hazard is considered moderate when slopes are below 8 percent and severe on slopes above 8 percent. Special attention needs to be given to road, skid-trail, fire lanes and landing construction, and maintenance to prevent damage due to erosion.

WOODLAND SUITABILITY GROUP 9

These are the poorly drained soils with heavy clay subsoils.

The average site index for loblolly and slash pine is 75 and for shortleaf 65. Longleaf is generally not suited to these soils.

The degree of plant competition from brush and other plants following the removal of overstory is rated as severe. Natural regeneration cannot be relied upon to provide adequate restocking of designated species. Special management and site preparation treatments are necessary such as land clearing, controlled burning, use of chemical sprays, girdling, tree planting with replanting as needed, etc.

Mortality of natural occurring seedlings during the first few years, when plant competition is not a factor, is considered moderate for loblolly and severe for shortleaf and longleaf. Natural regeneration, therefore, cannot always be relied upon for adequate and immediate restocking. Mortality of planted loblolly and longleaf seedlings is rated severe, and for slash, moderate. Planting with considerable replanting and special seedbed preparation are necessary to assure adequate and immediate restocking of this group of soils. Water control may be required.

Forest pests are no special problem on this group of soils.

Equipment limitation is rated as severe. This is principally due to the factor of soil wetness which may restrict equipment use for periods longer than 3 months. Woods work, or other cultural operations that may be planned, must be restricted to the drier periods of the year on these soils.

Soil erosion is no special problem on this group of soils when the woodlands are managed according to currently acceptable standards.

WOODLAND SUITABILITY GROUP 10

These are the well drained gravelly phase soils with moderately heavy to heavy clay subsoils.

The average site index for loblolly and slash is 75, for shortleaf 65. Longleaf pines are generally not found on these soils.

M-32-FTW-59

The degree of plant competition from brush and other plants following the removal of overstory is considered moderate. Competition develops on these soils but will not ordinarily prevent adequate stand establishment of the designated species. Establishment may be delayed and initial growth rate slowed thereby delaying the development of a fully stocked stand. Some site preparation may be necessary in order to establish an adequate stand without delay.

Mortality of natural occurring seedlings during the first few years with plant competition controlled is rated as slight. Under these conditions, adequate natural regeneration will usually occur where proper silvicultural conditions exist. For planted seedlings the mortality is rated moderate. Satisfactory restocking by initial planting can be expected 3 years out of 5. Some seedbed preparation may be advisable to assure a higher probability of adequate and immediate restocking by initial planting. Some replanting may be necessary to fill in openings.

Forest pests are no special problem on this group of soils.

Equipment limitation is due to slope and the gravelly condition that interferes with tree planting equipment. The limitation is considered moderate on slopes below 8 percent and severe on slopes greater than this. High quality roads, skid-trails and landings usually need to be constructed and attention given to their maintenance on the steeper slopes.

Erosion hazard is considered slight on all mapping units where the slope is less than 8 percent. On slopes above 8 percent, erosion hazard is rated as moderate, and some special techniques of construction and maintenance of roads, skid-trails, landings, and fire lanes need to be considered in woodland planning.

WOODLAND SUITABILITY GROUP 11

These are the coarse sandy soils with coarse sandy subsoils.

The average site index for loblolly and slash is 70, for shortleaf 70, and for longleaf 60.

The degree of plant competition from brush and other plants following the removal of overstory is regarded as slight. Invasion of undesirable species will only slightly impede natural regeneration and growth of designated species.

Seedling mortality, both planted and natural, during the first few years is rated as somewhat severe. Natural regeneration cannot, therefore, be relied upon. Satisfactory restocking by initial planting, even with plant competition controlled, can be expected only about 1 to 2 years out of 5. Planting with considerable replanting, special seedbed preparation, and superior planting techniques using high quality planting stock are necessary to assure adequate and immediate restocking.

M-32-FTW-59

Forest pests in the form of gophers and especially town ants cause severe mortality and/or damage if they are present. Pest control may be necessary, therefore, before planting.

Equipment limitation is rated as moderate on slopes up to 8 percent and severe on slopes above this amount. The limitation is due principally to the factor of loose sand on the surface. The sand particles become detached easily during the dry periods of the year and reduce the traction needed for moving equipment. Planting seedlings on these light-textured soils also involves some mechanical difficulties, especially on the steeper slopes where it is difficult to operate planting and other types of equipment. High quality road, skid-trail and landing construction, and costly maintenance are usually necessary.

On slopes up to 5 percent there is no special erosion problem. A moderate erosion hazard exists mainly in the form of gully erosion on slopes of 5 to 10 percent, and it is considered severe on slopes above 10 percent. Road, skid-trail, fire lane construction, and maintenance require special management techniques to prevent loss due to soil erosion on the steeper slopes.

WOODLAND SUITABILITY GROUP 12

These are the acid clay textured soils that may have a dark colored surface and are subject to cracking during dry periods of the year.

The average site index for loblolly and slash pine is 75, for shortleaf 65, and for longleaf 60.

The degree of plant competition from brush and other plants following the removal of overstory is considered moderate. Competition develops on these soils but will not ordinarily prevent adequate stand establishment of the designated species. Establishment may be delayed and initial growth slowed. Some site preparation may be necessary in order to establish an adequate stand without delay.

Mortality of natural occurring seedlings during the first few years, with plant competition controlled, is rated as moderate. Regeneration by this means cannot always be relied upon for adequate and immediate restocking. For plant seedlings, expected mortality is rated severe. Satisfactory restocking from initial plantings can be expected only about 2 years out of 5. Arrangements for replanting to fill in important openings and to replant areas of near or complete failure need to be considered in planning. Planting with considerable replanting, special seedbed preparation, use of high quality planting stock, and superior planting techniques are necessary to assure adequate and immediate restocking.

Forest pests are no special problem on this group of soils.

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Equipment limitations are rated as severe because of the clay texture of these soils. Planting seedlings on these fine textured soils involves some mechanical difficulties, especially on the steeper slopes. Mechanical planting and other equipment use is restricted to periods when moisture conditions are favorable. Equipment use during restrictive periods, which may extend over periods up to 3 months, results in injury to tree roots, formation of runoff channels and injury to soil structure. Special techniques are required for construction and maintenance of roads, trails, and landings.

Erosion hazard is moderate on slopes below 8 percent but severe on slopes above this gradient. Erosion is increased by equipment use during wet periods which emphasizes the need for careful planning on the construction and maintenance of roads, skid-trails, and fire lanes.

WOODLAND SUITABILITY GROUP 13

These are the alkaline clay textured and very shallow soils that may be dark in color and subject to cracking during dry periods.

The average site index for loblolly and slash is 60, for shortleaf 50, and for longleaf 45.

The degree of plant competition from brush and other plants following the removal of overstory is considered severe. Natural regeneration cannot be relied upon to provide adequate restocking. Site preparation treatments such as land clearing, controlled burning, use of chemical sprays, girdling, tree planting with replanting as needed, must be considered to assure adequate and immediate regeneration.

Mortality of both natural and planted seedlings, with plant competition controlled, is rated as rather severe. Therefore, natural regeneration cannot be relied upon. Satisfactory restocking by initial planting can be expected only about 1 to 2 years out of 5. Arrangements for replanting to fill in important openings and to replant areas of near or complete failure need to be considered in planning. Special seedbed preparation, superior planting techniques, and use of high quality planting stock are advisable to assure adequate and immediate restocking of these soils.

Forest pests related specifically to soil influences are no special problem on this group of soils.

Equipment limitations are rated as severe because of the clay texture of the alkaline soils and the steep slopes of the very shallow soils. Planting seedlings on the fine textured soils involves some mechanical difficulties. Planting, and other equipment use, is restricted to periods when moisture conditions are favorable. Unfavorable periods up to 3 months duration may be

M-32-FTW-59

expected. Equipment use during restricted periods results in injury to tree roots, development of runoff channels, and injury to soil structure. Special techniques are required for construction and maintenance of roads, trails, and landings.

Erosion hazard is severe on this group of soils. Erosion is increased by equipment use during wet periods which emphasizes the need for careful planning in the construction and maintenance of roads, skid-trails, fire lanes, etc.

ECONOMIC INTERPRETATIONS

Economic interpretations of soil use, crop and soil management are essential if such enterprises as tree farming are to be placed on a sound financial basis. It is logical to develop these interpretations for woodland suitability groupings of soils to augment the other information summarized for them. Figure 14 is an example of such economic interpretations. The heavy staggered line, representing site index 90, is indicative of expected results from managing loblolly pine stands on soils in woodland suitability groups 3 and 4. The comparable line for site index 80 applies to woodland suitability groups 6 and 7, and after some interpolation, to groups 5. The line representing site index 70 applies to woodland suitability group 11, and with some interpolation, to groups 8, 9, 10, and 12. Site index line 60 applies to group 13. Information for woodland suitability groups 1 and 2 can be obtained by extrapolation from the line representing site index 90.

Figure 14 illustrates graphically when a woodland owner can expect to recover investment costs in good woodland conservation practices including periodic commercial thinnings and specified croptree harvesting. Returns from periodic thinnings are figured at 85% of maximum production. The thinnings provide required growing room for selected trees left in the stand until the next recurring thinning date. The length of this period is adjusted to the site quality of the soil on which the stand is growing so that the amount of growth is sufficient to justify another thinning. Specified crop tree harvesting provides proper age-class control and allows continuity of the wood producing enterprise throughout succeeding cutting cycles and rotations.

Investment costs, such as those for establishing a stand, are shown for different amounts by the solid curved lines in figure 14. These have been carried with interest at 4% compounded annually. They show the value of any such investment at future dates. The owner's "operating margin" is approximated by the solid staggered lines which represent soils of different site quality. These apply to any soil within woodland suitability groupings whose average site index is near that shown for any particular staggered line on the chart. The staggered lines, or "operator's margin", are the difference between gross income from marketing the periodic thinnings and harvested crop trees, carried at 4% compound interest, and the operating costs. Marketing income has been based on assumed production of pulpwood at $5.00 per cord stumpage. Operating costs

M-32-FTW-59

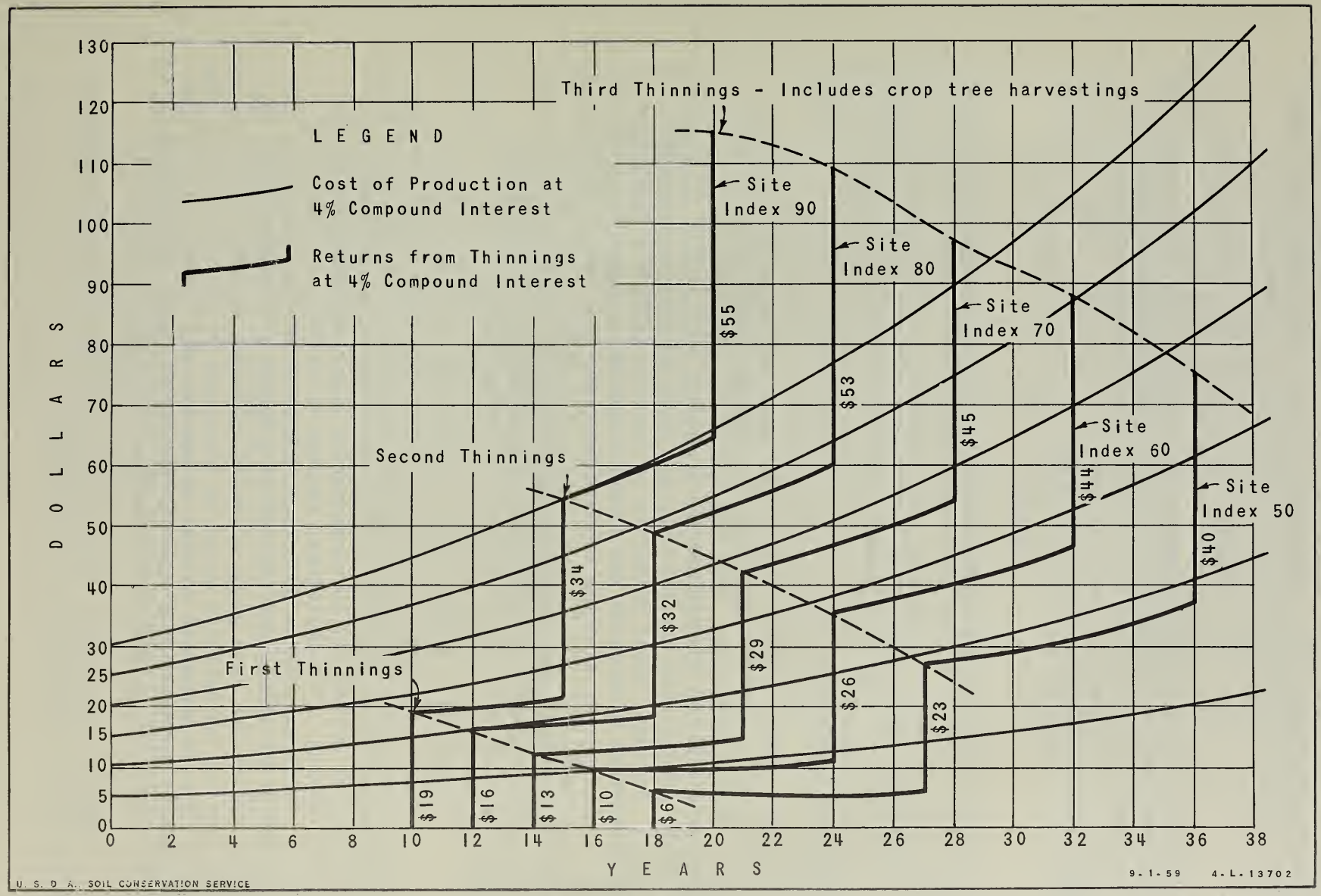

Figure 14 Comparison between costs of production and returns from periodic thinnings of loblolly pine on soils of different site index.

include: fire protection, 5¢ per acre annually; taxes, 25¢ per acre annually; marking costs, $2.00 per acre - first thinning, $1.25 per acre - second thinning, and $1.00 per acre - third thinning. No crop tree harvesting is included until the third thinning.

It is obvious that on soils in woodland suitability groups 3 and 4 (site index 90) that the value of pulpwood thinnings at 10 years of age would recover establishment costs of about $13.00 per acre. In contrast, soils in woodland suitability group 13 (site index 60) would have to be carried about 24 years and be thinned twice before a similar investment in establishment is recovered. Many such examples can be obtained from figure 14.

SUMMARY

Soil survey interpretations for use in producing wood crops of loblolly, shortleaf, longleaf, and slash pine in the Forested Coastal Plain Area of Western Louisiana are reported. Potential productivity of soils for these tree crops have been developed by field sampling to determine average site index values. A total of 213 plot samples of loblolly pine, 115 of shortleaf, 51 of longleaf, and 13 of slash pine were measured.

Soils are rated also for other items indicating the kind and intensity of treatments necessary to adequate woodland conservation. These items are: seedling mortality (regeneration); plant competition (brush encroachment); equipment limitations (trafficability); forest pest hazards that are soil related; and erosion hazard. Ratings, based primarily on locally-available knowledge and experience with soils and forest crops in the area, placed each soil into one of three classes for each item rated, depending upon the degree of limitation or hazard involved. The rating criteria, shown in the appendix, was designed specifically to distinguish between the kinds and intensities of conservation practices that need to be employed in producing wood crops on different soils.

To simplify the presentation of this information, and to make it more readily usable by landowners, the soils were assembled into 13 Woodland Suitability Groups by collecting those soils showing the greatest uniformity in conservation practice needs and in expected returns. The individual ratings of different items were used in developing these groupings, tempered by a knowledge of soil characteristics, and the use of judgment. The average rating for each item for each group of soils is shown in table 1 of the text. Each woodland suitability group is discussed in narrative form. The information is presented so that it can be readily used with any of the several kinds of soil surveys that exist in the area in applying soil information to woodland conservation operations.

Original plot data to determine site index and other reference materials are summarized in the appendix.

M-32-FtW-59

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M-32-FTW-59

APPENDIX

Contents

M-32-FTW-59

EXPLANATION OF ITEMS RECORDED BY PLOT LOCATIONS IN APPENDIX TABLES 1, 2, 3, and 4

Mapping symbol -- The portion of this symbol preceeding the first dash (-) refers to a group of soils that have similar profile characteristics such as depth, texture, structure, permeability, and consistence of the various horizons. Upper and lower case letters preceeding or following the numerical digets refer to special inhibiting factors that are recognized in soil surveying. The next upper case item is the symbol designating a specific slope class, and the last number of the symbol indicates the class of erosion that is observed. Complete definitions and descriptions of these mapping symbols are on file in the Soil Conservation Service State Office at Alexandria, Louisiana.

Plot numbers -- Plots were numbered by different work teams, starting with the number 1 and continuing consecutively, regardless of the parish in which the plots were located or tree species being measured. Teams worked in different locations so that no duplication exists. The parish name is used as a suffix to the plot number to aid in identification. Detailed information showing the location of these plots is on file in the State Office of the Soil Conservation Service.

Plot positions -- Top slope positions were designated "T"; middle slope positions as "M"; and "B" referred to bottom slope positions. Positions were not recorded on slopes of less than one percent.

Previous land use -- An effort was made to determine whether the soils on each plot were either "N.C", not cultivated, or "C", cultivated.

Stocking -- Forest stands measured were rated as to density of stocking. "E" referred to stands 75 to 100% stocked; "G" stands from 50 to 75% stocked; "F" stands 25 to 50% stocked; and "P" referred to stands that were stocked less than 25%. The stocking standard in each case was assumed to be $(D + 6)^2$.

Understory density -- This was observed and rated as: "H", 66 to 100% of the ground area shaded by woody plants; "M", 33 to 66% shaded; "L", 0 to 33% shaded; and "O", when no understory was present.

Other measurements -- Other measurements recorded in these tables have been described in the text.

M-32-FTW-59

APPENDIX TABLE 1 -- Summary of Soil-Site Correlation Plot Data -- Loblolly Pine

Soil Type	Mapping Symbol	Plot and Parish	Surface Thickness In.	Position on Slope	Frost-free Period Days	Annual Rainfall In.	Warm Season In.	Previous Land Use	Average Height Ft.	Average Age Yr.	Average DBH In.	Trees Measured No.	Stocking	Density Understory	Site Index
* Almont (Acadia) sil	5al-A-1	27-Webster	8	-	230	48	24	N.C.	73	43	15	3	E	M	78
* Almont (Acadia) sil	5al-A-1	16-Webster	8	-	230	47	24	N.C.	81	50	20	3	G	L	81
* Almont (Acadia) sil	5al-A-1	154-Caddo	15	-	230	47	23	N.C.	74	46	13	4	E	L	77
Beauregard sil	6al-B-1	124-Winn	10	M	230	54	24	N.C.	95	48	18	3	E	M	97
Beauregard vfsl	6al-B-1	177-Caddo	14	B	230	46	22	C.	95	54	17	2	E	L	92
Beauregard vfsl	6al-A-1	170-Beauregard	5	-	252	52	26	N.C.	70	35	14	3	F	L	83
Beauregard vfsl	6al-A-1	215-LaSalle	8	-	230	56	25	N.C.	92	55	19	3	G	M	89
Beauregard vfsl	6al-A-1	44-Grant	24	-	230	54	25	N.C.	81	39	20	2	F	M	90
Beauregard vfsl	6al-A-1	73-Sabine	10	-	230	46	22	N.C.	82	31	15	3	E	H	102
Beauregard vfsl	6al-B-1	97-Jackson	10	M	237	50	23	C.	88	47	16	3	G	L	90
Beauregard vfsl	6al-B-1	129-Vernon	6	M	230	52	27	N.C.	71	34	17	3	E	L	85
Beauregard vfsl	6al-C-1	133-Vernon	8	M	245	52	27	N.C.	71	33	18	3	G	L	87
Beauregard vfsl	6al-C-1	59-LaSalle	5	M	230	57	25	N.C.	86	49	16	3	E	M	87
Beauregard lfs	11al-F-1	45-Rapides	8	M	230	54	26	N.C.	81	35	15	3	E	M	99
Bibb sil,overflow ph.	8ab-A-1	127-Allen		-	245	55	27	N.C.	86	35	17	3	E	H	100
Binnsville c	01f-B-1	180-Vernon	4	M	245	50	26	N.C.	50	33	10	3	F	L	60
Binnsville c	01f-B-1	179-Vernon	4	M	245	50	26	N.C.	53	33	12	3	F	L	64
Binnsville c	01f-B-1	178-Vernon	4	M	245	50	26	N.C.	50	37	11	3	F	M	57
Binnsville c	01f-C-2	207-Rapides	3	M	230	52	26	N.C.	44	32	10	3	G	O	55
Boswell vfsl	5-B-2	145-Red River	5	M	237	46	23	C.	72	37	15	3	G	L	82
Boswell vfsl	5-C-3	191-Bienville	3	M	237	48	23	N.C.	75	41	17	3	G	M	81
Boswell vfsl	5-B-1	94-Natchitoches	12	M	230	50	24	N.C.	54	29	14	3	F	L	70
Boswell vfsl	5-B-1	66-Sabine	12	M	230	47	23	N.C.	69	37	18	3	F	H	79
Boswell vfsl	5-B-1	74-DeSoto	9	M	237	46	22	N.C.	64	33	14	4	E	M	78
Boswell fsl	5-D-1	61-Bienville	4	M	237	48	23	N.C.	68	42	13	3	E	L	73
Boswell gfsl	5d-F-1	84-DeSoto	12	T	237	46	22	N.C.	63	55	18	1	E	L	61
Bowie sil	6-D-1	121-Winn	8	M	230	54	24	N.C.	92	58	18	3	E	M	87
Bowie sil	6-A-1	10-Avoyelles	5	-	252	57	26	N.C.	72	32	13	3	F	L	89
Bowie vfsl	6-B-1	124-Allen	6	M	245	55	27	N.C.	68	34	11	3	E	L	81
Caddo sil	6a-A-1	191-LaSalle	5	-	230	58	25	N.C.	67	39	12	3	G	L	75
Caddo sil	6a-B-1	27-Grant	10	M	230	56	25	N.C.	81	51	17	3	G	L	81
Caddo sil, dep.ph.	M6a-A-1	127-Allen	34	-	245	55	27	N.C.	87	39	17	4	E	H	97
Caddo sil, dep.ph.	M6a-A-1	120-Allen	30	-	245	55	27	N.C.	86	44	16	3	E	H	91
Caddo vfsl	6a-A-1	151-Beauregard	5	-	252	52	26	N.C.	60	30	11	3	G	L	77
Caddo vfsl	6a-B-1	17-Grant	4	M	230	56	25	N.C.	79	40	14	3	E	M	87
Caddo vfsl	6a-B-1	31-Grant	6	M	230	52	24	N.C.	72	35	14	4	E	M	85
Caddo vfsl	6a-B-1	153-Bossier	10	M	230	47	24	C.	72	33	14	3	E	M	88
Cahaba fsl	7-A-1	49-Rapides	5	-	230	54	26	N.C.	78	34	13	3	E	H	93

M-32-FTW-59

APPENDIX TABLE 1 (Cont'd) -- Summary of Soil-Site Correlation Plot Data -- Loblolly Pine

Soil Type	Mapping Symbol	Plot and Parish	Surface Thickness In.	Position on Slope	Frost-free Period Days	Annual Rainfall In.	Warm Season In.	Previous Land Use	Average Height Ft.	Average Age Yr.	Average DBH In.	Trees Measured No.	Stocking	Density Understory	Site Index
Cahaba fsl	7-B-1	81-Sabine	19	M	230	48	23	N.C.	74	32	13	3	E	L	91
Cahaba fsl	7-B-1	58-Claiborne	14	B	230	48	24	C.	77	32	13	3	E	M	94
Cahaba sl	7X-B-1	170-Winn	12	M	230	50	24	C.	104	52	19	3	E	M	102
Cahaba sl	7X-A-1	128-Rapides	15	-	230	54	26	N.C.	87	39	18	4	E	H	97
Cuthbert fsl	L5-G-1	127-Caldwell	3	T	237	53	24	N.C.	63	46	13	3	E	M	66
Cuthbert fsl	L5-G-1	128-Caldwell	2	M	237	53	24	N.C.	72	43	17	3	G	M	77
Cuthbert fsl	L5-F-1	42-Claiborne	6	M	230	49	24	N.C.	63	37	13	3	G	M	73
Dougherty fsl	7-B-2	3-Caddo	9	T	230	46	22	N.C.	81	48	17	3	E	L	82
Dougherty fsl	7-D-2	2-Caddo	8	T	230	46	22	N.C.	82	48	16	1	E	L	83
Eustis lfs	13-D-1	201-Claiborne		M	230	48	24	N.C.	66	36	14	3	G	L	77
Eustis lfs	13-E-1	56-LaSalle	14	M	230	57	25	N.C.	85	45	14	3	E	M	88
Gilead sl	6-B-1	60-Claiborne	16	T	230	48	24	N.C.	73	36	14	3	G	O	85
* Gore sil	L5-B-1	156-Caddo	4	M	230	47	23	N.C.	72	47	15	2	G	L	74
* Gore sil	L5-E-2	107-Evangeline	3	M	252	56	27	N.C.	76	42	13	3	E	L	82
* Gore vfsl	L5-B-1	156-Rapides	7	M	230	54	26	N.C.	67	47	16	3	F	O	69
* Gore vfsl	L5-B-1	48-Rapides	2	M	230	54	26	N.C.	68	46	13	3	G	H	71
* Gore vfsl	L5-B-1	43-Grant	4	M	230	54	25	N.C.	80	49	14	3	G	M	81
* Hortman vfsl	5-C-3	189-Bossier	6	M	230	47	24	N.C.	73	45	16	3	G	M	76
Hunt c	01-B-1	176-Vernon	4	M	245	50	26	N.C.	73	42	15	3	G	L	78
Iuka sil,overflow ph.	8alb-A-1	171-Winn	5	-	230	50	24	N.C.	98	51	18	3	E	M	98
Iuka sil,overflow ph.	8alb-A-1	108-Union	8	-	230	50	23	N.C.	103	47	17	3	E	M	105
Iuka vfsl,overflow ph.	9alb-A-1	189-LaSalle		-	230	58	25	N.C.	77	26	15	3	G	M	109
Iuka sl,overflow ph.	9alb-A-1	100-Natchitoches		-	230	50	24	N.C.	87	39	16	4	G	M	98
Kalmia vfsl	7-A-1	123-Allen	10	-	245	55	27	N.C.	84	42	15	3	G	M	90
Kalmia vfsl	7-A-1	54-Rapides	7	-	230	56	27	N.C.	69	27	15	3	F	L	94
Kalmia fsl	7-B-1	76-DeSoto	10	M	230	46	22	N.C.	74	33	13	3	E	M	89
Kirvin sl	6-B-2	175-Caddo	8	T	230	46	22	C.	66	36	12	3	E	L	77
Kirvin gfsl	6d-D-2	138-Bossier	6	M	230	47	24	N.C.	78	57	16	3	E	L	75
Kirvin gfsl	6d-D-3	50-Claiborne	8	T	230	49	24	N.C.	66	33	15	3	G	O	80
* Kisatchie c	24-C-1	92-Natchitoches	3	M	230	52	25	N.C.	47	28	11	3	G	M	62
* Kisatchie soils	25-B-1	211-Natchitoches	1	M	230	50	24	N.C.	37	28	10	3	F	L	51
* Kisatchie soils	25-D-1	93-Natchitoches	6	M	230	51	25	N.C.	53	32	13	2	F	L	65
Lakeland lfs	13-D-1	115-Bienville		T	237	48	23	N.C.	66	34	14	3	G	L	79
Lakeland lfs	13-D-2	46-Claiborne		T	230	49	24	C.	64	30	12	3	G	O	82
Lakeland lfs	13-E-1	104-Natchitoches		M	230	50	24	N.C.	67	32	13	3	G	M	83
Lakeland ls	130-B-1	66-Bienville		T	237	48	23	N.C.	69	42	13	3			75
Lakeland ls	130-B-1	72-Bienville		M	237	48	23	N.C.	63	40	14	2	G	M	69
Lakeland ls	130-C-1	194-Bienville		M	237	48	23	N.C.	61	36	12	3	G	L	71
Lexington sil	6-E-1	188-LaSalle	4	M	230	58	25	N.C.	54	27	11	3	G	L	74

M-32-FTW-59

APPENDIX TABLE 1 (Cont'd) -- Summary of Soil-Site Correlation Plot Data -- Loblolly Pine

Soil Type	Mapping Symbol	Plot and Parish	Surface Thickness In.	Position on Slope	Frost-free Period Days	Annual Rainfall In.	Warm Season In.	Previous Land Use	Average Height Ft.	Average Age Yr.	Average DBH In.	Trees Measured No.	Stocking	Density Understory	Site Index
* Mashulaville sil	5a-A-1	117-Winn	10	-	230	54	24	N.C.	72	46	15	3	E	L	75
* Mashulaville sil	5a-A-1	119-Winn	10	-	230	54	24	N.C.	78	46	15	3	E	M	81
* Mashulaville sil	5a-A-1	11-Rapides	5	-	230	57	26	N.C.	74	41	14	5	G	L	80
* Mashulaville vfsl	5a-A-1	133-Ouachita	12	-	230	51	24	N.C.	72	49	16	3	G	H	73
Mantachie sil,o.f.ph.	8alb-A-1	22-Bienville		-	237	48	23	N.C.	89	39	15	2	G	H	99
Mantachie vfsl,o.f.ph.	8alb-A-1	94-Jackson	12	-	237	50	23	N.C.	73	29	15	3	E	L	95
Myatt sil	5a-A-1	53-Rapides	18	-	230	56	27	N.C.	77	44	14	3	E	H	81
Myatt sil	5a-A-1	40-Claiborne	10	-	230	49	24	N.C.	85	57	18	3	G	M	82
Myatt sil	5a-A-1	160-Winn	6	-	230	51	24	N.C.	83	49	16	3	E	M	84
Myatt sil	5a-A-1	23-Bienville	6	-	237	48	23	N.C.	73	47	15	1	G	H	76
Myatt sil	5a-A-1	166-Winn	5	-	230	50	24	N.C.	84	58	17	3	E	L	79
Myatt sl,th.sur.ph.	M6a-A-1	110-Union	20	-	230	50	23	N.C.	75	31	13	3	E	M	94
Myatt vfsl,th.sur.ph.	M6a-A-1	109-Union	20	-	230	50	23	N.C.	76	29	14	3	E	M	98
Nacogdoches gfsl	6d-F-1	141-Bossier	6	M	230	47	24	N.C.	73	46	13	4	G	M	76
Natchitoches c	1f-D-1	68-Bienville	4	M	237	48	23	N.C.	54	42	13	3	G	L	59
Norfolk sl	7X-B-2	102-Lincoln	8	M	230	50	23	C.	75	36	14	3	E	L	87
Norfolk sl	7X-B-1	201-Vernon		M	230	50	26	N.C.	91	42	16	3	G	L	98
Norfolk sl	7X-C-1	106-Natchitoches	10	M	230	50	24	N.C.	74	32	15	3	E	L	91
* Oberlin sil	5a-A-1	121-Allen	17	-	245	55	27	N.C.	73	38	14	3	E	L	82
Ochlock. sil,o.f.ph.	9b-A-1	120-Winn		-	230	50	24	N.C.	99	41	17	3	E	M	108
Ochlock. vfsl,o.f.ph.	9b-A-1	80-Sabine		-	230	48	23	N.C.	89	39	15	3	G	H	99
Ochlock. vfsl,o.f.ph.	9b-A-1	134-Vernon		-	245	54	27	N.C.	84	30	15	3	E	M	108
Ochlock. fsl,o.f.ph.	9b-A-1	107-Union	8	-	230	50	23	N.C.	105	56	19	3	E	M	100
Ochlock. fsl,o.f.ph.	9b-A-1	55-Claiborne	16	-	230	48	24	C.	90	35	14	3	E	L	106
Ochlock. fsl,o.f.ph.	9b-A-1	183-Caddo		-	230	46	22	N.C.	95	42	17	3	E	L	103
Ochlock. fsl,o.f.ph.	9b-A-1	95-Jackson		-	237	50	23	N.C.	84	37	19	3	E	L	96
Ora fsl	6-B-2	106-Union	10	B	230	50	23	C.	85	50	16	3	E	M	85
Ora sl	6-C-3	153-Bossier	8	M	230	47	24	N.C.	71	38	15	3	G	M	79
Ora sl, th.sur.ph.	6-B-1	200-Claiborne	26	T	230	48	24	C.	70	34	13	3	E	L	83
Orangeburg fsl	7-D-3	18-Webster	8	M	230	47	24	N.C.	86	60	17	5	F	L	81
Orangeburg lfs	12-B-1	23-Grant	7	M	230	56	25	N.C.	79	33	17	3	G	M	96
Orangeburg lfs	12-C-1	25-Grant	6	M	230	56	25	N.C.	72	32	14	3	E	L	89
Pheba vfsl	5a1-A-1	57-LaSalle	5	-	230	57	25	N.C.	71	42	14	3	G	M	77
Providence sil	6-B-1	183-Catahoula	5	M	230	58	25	N.C.	79	51	19	3	G	L	79
Providence sil	6-E-2	182-Catahoula	18	T	230	58	25	N.C.	55	26	11	3	G	M	78
* Red Bayou(Cahaba)fsl	7-B-1	14-Webster	10	M	230	47	24	C.	62	27	12	2	G	L	84
Ruston fsl	7-B-1	173-Winn	5	T	230	50	24	N.C.	83	46	17	3	E	M	86
Ruston fsl	7-B-1	19-Webster	10	B	230	47	24	N.C.	73	32	14	3	G	L	90

M-32-FTW-59

APPENDIX TABLE 1 (Cont'd) -- Summary of Soil-Site Correlation Plot Data -- Loblolly Pine

Soil Type	Mapping Symbol	Plot and Parish	Surface Thickness In.	Position on Slope	Frost-free Period Days	Annual Rainfall In.	Warm Season In.	Previous Land Use	Average Height Ft.	Average Age Yr.	Average DBH In.	Trees Measured No.	Stocking	Density Understory	Site Index
Ruston fsl	7-B-1	78-Sabine	14	M	230	47	23	N.C.	70	31	16	3	G	L	88
Ruston fsl	7-D-1	37-Claiborne	18	M	230	48	24	C.	88	51	20	3	E	M	88
Ruston fsl	7-D-2	137-Jackson	10	M	237	50	23	C.	77	37	15	3	E	L	88
Ruston fsl	7-E-1	115-Rapides	6	M	230	56	26	N.C.	88	50	15	3	E	H	88
Ruston fsl	7-B-1	126-Allen	8	M	245	55	27	N.C.	71	30	15	3	G	L	90
Ruston fsl,hv.sub.ph.	6-B-1	39-Rapides	6	M	230	57	26	N.C.	74	34	14	3	E	O	88
Ruston fsl,hv.sub.ph.	6-B-1	34-Grant	6	T	230	54	25	N.C.	67	34	13	3	G	L	80
Ruston fsl,hv.sub.ph.	6-B-1	46-Rapides	9	M	230	54	26	N.C.	76	33	16	3	E	M	92
Ruston sl	7-D-1	33-Grant	7	M	230	52	25	N.C.	93	53	19	3	G	L	91
Ruston sl	7-B-1	37-Grant	10	M	230	54	25	N.C.	94	48	20	3	G	M	96
Ruston sl	7-D-3	67-Bienville	14	T	237	48	23	N.C.	68	32	14	4	G	L	84
Ruston sl	7-C-1	74-Sabine	15	M	230	46	22	N.C.	80	38	15	3	E	H	90
Ruston sl	7-C-1	50-Rapides	11	M	230	54	26	N.C.	75	33	16	3	E	H	91
Ruston sl	7-C-1	51-Rapides	10	M	230	56	26	N.C.	69	35	14	3	G	O	81
Ruston sl	7-C-3	112-Union	10	M	230	50	23	C.	75	39	14	3	E	M	84
Ruston sl,hv.sub.ph.	6-B-1	29-Grant	6	M	230	54	25	N.C.	78	43	15	3	E	L	84
Ruston sl,th.sur.ph.	7X-B-1	39-Claiborne	20	B	230	48	24	C.	80	31	16	3	G	L	99
Ruston sl,th.sur.ph.	7X-D-2	100-Lincoln	16	M	230	50	23	C.	69	28	14	3	G	L	92
Ruston lfs	12-B-1	202-Claiborne	26	M	230	48	24	N.C.	80	42	16	3	E	L	87
Ruston lfs	12-B-1	199-Vernon	24	M	245	50	26	N.C.	66	28	11	3	E	O	89
Ruston lfs	12-D-1	65-Bienville	16	M	237	48	23	N.C.	89	60	16	3	E	L	84
Ruston lfs	12-D-2	45-Claiborne	24	M	230	49	24	C.	76	31	16	3	G	O	95
Ruston lfs	12-D-4	70-Bienville	5	M	237	48	23	C.	72	30	15	3	G	L	91
Ruston lfs	12-C-1	113-Winn	24	M	230	49	23	C.	97	55	20	3	G	L	94
* Sarepta(Stough) sil	6a1-A-1	25-Webster	12	-	230	47	24	N.C.	93	49	18	3	G	L	94
Savannah fsl	6-C-2	147-Bossier	7	M	230	47	24	C.	77	51	18	3	G	M	77
Sawyer vfsl	5-C-3	85-DeSoto	8	M	237	46	22	N.C.	78	54	16	3	E	L	76
Sawyer vfsl	5-C-1	169-Winn	3	M	230	52	24	C.	84	50	17	3	E	M	84
Sawyer vfsl	5-C-3	85-DeSoto	8	M	237	46	22	N.C.	83	55	14	1	E	L	80
Sawyer fsl	5-B-1	32-Grant	4	M	230	52	24	N.C.	59	30	13	3	G	M	76
Sawyer fsl	5-B-1	51-Claiborne	5	M	230	48	24	C.	68	32	14	3	G	L	84
Sawyer fsl	5-B-1	59-Claiborne	7	M	230	48	24	C.	67	33	14	3	G	L	81
Shubuta vfsl	6-B-1	78-DeSoto	10	B	237	46	22	N.C.	80	41	16	3	E	M	87
Shubuta vfsl	6-D-3	86-Sabine	6	M	230	48	24	N.C.	78	38	13	3	E	L	88
Shubuta fsl	6-B-1	213-LaSalle	8	M	230	57	25	N.C.	81	48	14	3	E	M	82
Shubuta fsl	6-B-1	87-Sabine	5	M	230	49	24	N.C.	82	38	17	3	E	L	92
Shubuta fsl	6-C-2	181-Caddo	8	M	230	46	22	C.	68	33	15	3	E	M	82

M-32-FTW-59

APPENDIX TABLE 1 (Cont'd) -- Summary of Soil-Site Correlation Plot Data -- Loblolly Pine

Soil Type	Mapping Symbol	Plot and Parish	Surface Thickness In.	Position on Slope	Frost-free Period Days	Annual Rainfall In.	Warm Season In.	Previous Land Use	Average Height Ft.	Average Age Yr.	Average DBH In.	Trees Measured No.	Stocking	Density Under-story	Site Index
Shubuta fsl	6-C-2	82-DeSoto	8	M	237	46	22	C.	70	33	13	4	G	L	85
Shubuta fsl	6-D-3	91-Lincoln	10	M	230	50	23	C.	74	40	15	3	E	L	81
Shubuta fsl	6-D-3	48-Claiborne	8	M	230	49	24	N.C.	70	37	16	3	G	O	80
Shubuta fsl	6-D-4	36-Lincoln	3	M	230	49	23	C.	62	31	12	3	G	L	78
Shubuta fsl	6-D-4	89-Lincoln	4	B	230	50	23	C.	84	45	16	3	E	L	88
Shubuta fsl	6-E-3	11-Webster	6	B	230	47	24	C.	73	40	14	3	E	L	80
Shubuta fsl	6-E-3	9-Webster	6	M	230	47	24	C.	67	42	13	3	E	L	73
Shubuta fsl	6-E-3	99-Jackson	10	M	237	50	23	C.	87	52	18	3	G	L	87
Shubuta sl	6-C-1	102-Natchitoches	5	M	230	50	24	N.C.	84	51	16	3	E	L	84
Shubuta gfsl	6d-B-1	92-Lincoln	10	T	230	50	23	N.C.	70	46	17	3	E	O	73
Shubuta gfsl	6d-D-1	34-Webster	12	T	230	48	24	N.C.	64	37	13	1	G	M	73
Shubuta gfsl	6d-E-2	184-Bossier	6	M	230	47	24	N.C.	66	34	12	3	E	M	79
Stough sil	6al-A-1	174-Winn	6	-	230	50	24	N.C.	92	48	17	3	E	M	94
Stough sil	6al-A-1	24-Bienville	12	-	237	48	23	N.C.	95	57	17	3	E	M	91
Stough sil	6al-B-1	57-Claiborne	14	B	230	48	24	C.	77	31	14	3	G	M	97
Stough vfsl	6al-A-1	97-Natchitoches	7	-	230	50	24	N.C.	62	28	16	3	F	M	83
Stough vfsl	6al-A-1	135-Vernon	24	-	245	54	27	N.C.	73	33	14	3	E	H	88
Stough vfsl	6al-A-1	136-Jackson	10	-	237	50	23	N.C.	89	48	16	3	E	M	90
Stough vfsl	6al-A-1	83-Sabine	5	-	230	48	23	N.C.	77	33	15	3	G	L	94
* Summerfield sil	5al-A-1	60-LaSalle	5	-	230	57	25	N.C.	68	33	14	3	G	M	82
* Summerfield sil	5al-A-1	63-LaSalle	6	-	230	57	25	N.C.	61	32	12	3	E	L	75
* Summerfield vfsl	5al-A-1	206-Rapides	14	-	230	52	26	N.C.	59	33	11	3	E	L	72
* Summerfield vfsl	5al-B-1	164-Winn	5	M	230	52	24	N.C.	74	41	16	3	G	M	81
* Summerfield vfsl	5al-B-1	30-Grant	6	M	230	54	25	N.C.	70	42	14	3	G	M	76
* Summerfield vfsl	5al-B-1	87-DeSoto	12	M	237	46	22	N.C.	64	35	13	3	E	M	76
* Summerfield vfsl	5al-B-2	148-Beauregard	18	M	252	52	26	N.C.	62	34	12	3	G	M	74
* Summerfield sl	5al-B-1	98-Natchitoches	24	M	230	50	24	N.C.	84	53	15	3	E	M	83
* Summerfield lfs	10al-A-1	202-Vernon	6	M	245	50	26	N.C.	78	41	16	3	G	M	85
Sumter c	1f-B-1	119-Natchitoches	2	M	230	52	25	N.C.	54	47	18	3	G	O	56
Sumter c	1f-B-1	216-LaSalle	4	M	230	56	25	N.C.	62	54	17	3	F	M	60
Sumter c	1f-B-2	89-Natchitoches	4	M	230	52	25	N.C.	44	32	11	3	F	O	54
Sumter c	1f-C-2	118-Natchitoches	7	M	230	52	25	N.C.	72	66	19	3	E	L	66
Susquehanna c	1-E-4	196-DeSoto	1	M	237	46	22	N.C.	62	40	14	3	E	L	68
Susquehanna c	1-B-1	135-Jackson	2	M	237	50	23	N.C.	78	49	15	3	E	L	79
Susquehanna sicl	L5-A-1	190-Bienville	3	-	237	48	23	N.C.	63	39	14	3	G	M	70
Susquehanna sil	L5-A-1	180-Caddo	3	-	230	46	22	N.C.	78	46	18	3	E	L	80
Susquehanna sil	L5-C-1	167-Winn	4	M	230	51	24	N.C.	79	48	16	3	G	M	80
Susquehanna vfsl	L5-C-4	178-Caddo	4	M	230	46	22	C.	53	31	13	3	G	L	72

M-32.FYW.59

APPENDIX TABLE 1 (Cont'd) -- Summary of Soil-Site Correlation Plot Data -- Loblolly Pine

Soil Type	Mapping Symbol	Plot and Parish	Surface Thickness In.	Position on Slope	Frost-free Period Days	Annual Rainfall In.	Warm Season In.	Previous Land Use	Average Height Ft.	Average Age Yr.	Average DBH In.	Trees Measured No.	Stocking	Density Under-story	Site Index
Susquehanna vfsl	L5-B-1	70-Sabine	6	M	230	47	23	N.C.	67	35	13	3	E	M	79
Susquehanna vfsl	L5-B-1	203-Rapides	2	M	230	52	26	N.C.	53	30	11	3	F	O	68
Susquehanna vfsl	L5-B-1	214-LaSalle	7	M	230	57	25	N.C.	64	51	11	3	F	M	64
Susquehanna vfsl	L5-C-1	209-Natchitoches	7	M	230	50	24	N.C.	71	47	16	3	G	M	73
Susquehanna vfsl	L5-D-2	76-Sabine	4	M	230	46	22	N.C.	70	38	15	3	G	L	79
Susquehanna fsl	L5-B-2	195-DeSoto	4	M	237	46	22	N.C.	58	30	13	3	G	M	74
Susquehanna fsl	L5-E-2	199-DeSoto	3	M	237	46	22	N.C.	61	34	11	3	G	L	72
Susquehanna fsl	L5-C-1	52-Claiborne	10	M	230	48	24	C.	65	38	13	3	G	M	73
Vaiden c	1-B-1	177-Vernon	3	M	245	50	26	N.C.	81	62	17	3	F	H	76
Vaiden c	1-B-1	162-Winn	3	M	245	50	24	N.C.	73	47	15	3	G	M	76
* Vian (Cahaba) fsl	7-B-1	206-Bossier	14	M	230	47	24	C.	100	56	17	1	G	L	96
* Vian (Cahaba) fsl	7-C-2	188-Bossier	10	M	230	47	24	N.C.	82	43	16	2	G	L	87
* Vian (Cahaba) sl	7X-B-1	218-Bossier	14	M	230	47	24	C.	101	53	16	1	G	L	98
Wet Alluvial land	33-A-1	140-Beauregard		-	252	52	27	N.C.	79	33	14	3	E	M	96
Wet Alluvial land	33-A-1	41-Grant		-	230	54	25	N.C.	89	34	18	3	F	H	107
Wet Alluvial land	33-B-1	125-Caldwell		-	237	53	24	N.C.	87	34	13	3	E	M	103
Wet Alluvial land	33-B-1	182-Caddo		-	230	46	22	N.C.	97	46	19	3	E	M	100
Wrightsville sic	5a-A-1	144-Bossier	6	-	230	47	24	N.C.	72	49	14	3	G	M	73
Wrightsville sil	5a-A-1	5-Caddo	4	-	230	46	22	N.C.	78	76	18	3	G	L	69
Wrightsville sil	5a-A-1	15-Webster	6	-	230	47	24	N.C.	70	53	14	3	G	M	68
Wrightsville sil	5a-A-1	158-Caddo	6	-	230	47	23	N.C.	70	49	15	3	G	L	71
Wrightsville sil	5a-A-1	157-Caddo	5	-	230	47	23	N.C.	68	47	13	3	G	L	70
Wrightsville sil	5a-A-1	29-Webster	8	-	230	48	24	N.C.	70	47	14	3	G	L	72

* Tentative Series -- Those names in parentheses are the suggested names pending final correlation.

M-32-FTW-59

APPENDIX TABLE 2 -- Summary of Soil-Site Correlation Plot Data - Shortleaf Pine

Soil Type	Mapping Symbol	Plot and Parish	Surface Thickness In.	Position on Slope	Frost-free Period Days	Annual Rainfall In.	Warm Season In.	Previous Land Use	Average Height Ft.	Average Age Yr.	Average DBH In.	Trees Measured No.	Stocking	Density Understory	Site Index
Acadia sil	5a1-B-1	149-Beauregard	10	M	252	54	30	N.C.	54	30	11	3	E	L	71
* Almont (Acadia) sil	5a1-A-1	28-Webster	8	-	230	48	24	N.C.	73	43	13	3	E	M	78
* Almont (Acadia) sil	5a1-A-1	155-Caddo	5	-	230	47	23	N.C.	73	46	13	3	G	L	76
* Almont (Acadia) sil	5a1-A-1	146-Red River	8	-	237	46	23	N.C.	85	75	16	3	G	M	70
Beauregard vfsl	6a1-B-1	130-Vernon	6	M	245	52	27	N.C.	67	35	11	3	E	L	81
Beauregard vfsl	6a1-B-2	96-Jackson	10	M	237	50	23	C.	85	50	15	3	G	L	85
Bowie vfsl	6-B-1	112-Evangeline	6	M	252	56	27	N.C.	66	36	10	3	E	M	78
Bowie vfsl	6-C-1	80-DeSoto	14	M	237	46	22	N.C.	73	39	13	3	E	M	82
Bowie fsl	6-B-1	77-Sabine	12	M	230	47	22	N.C.	75	58	13	3	E	M	69
Bowie fsl	6-B-1	72-Sabine	13	M	230	46	22	N.C.	69	43	12	3	E	H	74
Bowie sl	6-B-1	64-Sabine	18	M	230	47	23	N.C.	64	41	13	3	G	M	71
Boswell vfsl	5-C-1	122-Winn	8	M	230	54	24	N.C.	82	57	15	3	E	M	77
Boswell vfsl	5-B-1	75-DeSoto	9	M	237	46	22	N.C.	56	36	13	5	F	M	68
Boswell vfsl	5-C-2	165-Winn	5	M	230	50	24	N.C.	77	56	17	3	E	M	73
Boswell vfsl	5-C-3	192-Bienville	3	M	237	48	23	N.C.	71	40	13	3	G	M	79
Boswell gfsl	5d-F-1	83-DeSoto	12	T	237	46	22	N.C.	57	44	13	3	E	L	60
Caddo vfsl	6a-A-1	192-LaSalle	12	-	230	58	25	N.C.	61	33	12	3	E	L	76
Cahaba sl	7X-D-1	20-Webster	18	B	230	47	24	N.C.	77	47	13	2	G	M	78
Cuthbert fsl	L5-G-1	130-Caldwell	2	T	237	52	24	N.C.	65	53	12	3	E	M	63
Dougherty fsl	7-B-2	1-Caddo	6	T	230	46	22	N.C.	76	50	14	3	E	L	76
Dougherty fsl	7-B-1	17-Webster	10	T	230	47	24	C.	52	30	10	3	E	L	68
Eustis lfs	13-C-1	114-Winn	24	M	230	49	23	C.	87	56	16	3	E	L	82
Eustis lfs	13-D-1	85-Sabine	18	M	230	48	24	N.C.	67	34	12	3	G	M	81
Gore sil	L5-E-2	108-Evangeline	3	M	252	56	27	N.C.	70	59	13	3	E	M	64
Gore vfsl	L5-B-1	157-Rapides	4	M	230	54	26	N.C.	57	46	13	3	F	L	59
Gore vfsl	L5-B-1	47-Rapides	5	M	230	54	26	N.C.	64	41	12	3	F	L	71
Kalmia fsl	7-B-1	82-Sabine	22	M	230	48	23	N.C.	76	40	14	3	G	M	84
Kalmia fsl	7-B-1	77-DeSoto	10	M	237	46	22	N.C.	68	32	12	3	G	M	85
Kirvin fsl	6-B-2	176-Caddo	8	T	230	46	22	C.	63	36	11	3	E	L	75
Kirvin gfsl	6d-C-2	207-Webster	6	M	230	47	24	N.C.	61	41	11	3	G	M	68
Kirvin gfsl	6d-E-2	140-Bossier	8	M	230	47	24	N.C.	73	53	12	2	E	L	71
Lakeland lfs	13-D-1	116-Bienville		T	237	48	23	N.C.	72	43	17	3	G	L	77
Lakeland lfs	13-B-1	193-Bienville	16	M	237	48	23	N.C.	77	43	13	3	E	L	82
Lakeland ls	130-B-1	64-Bienville		T	237	48	23	N.C.	65	41	14	3	G	L	72
Lakeland ls	130-C-1	63-Bienville		T	237	48	23	N.C.	77	63	15	3	E	L	68
Lakeland ls	130-C-1	139-Bossier	8	M	230	47	24	N.C.	70	49	12	3	G	M	70
Lakeland ls	130-B-1	73-Bienville		T	237	48	23	N.C.	56	43	13	3	G	L	60
Lexington sil	6-B-1	187-LaSalle	6	M	230	58	25	N.C.	60	30	11	3	E	L	78

APPENDIX TABLE 2 (Cont'd) -- Summary of Soil-Site Correlation Plot Data -- Shortleaf Pine

Soil Type	Mapping Symbol	Plot and Parish	Surface Thickness In.	Position on Slope	Frost-free Period Days	Annual Rainfall In.	Warm Season In.	Previous Land Use	Average Height Ft.	Average Age Yr.	Average DBH In.	Trees Measured No.	Stocking	Density Understory	Site Index
Lexington sil	6-B-1	186-LaSalle	5	M	230	58	25	N.C.	51	26	11	3	E	L	73
Luverne gfsl	7d-G-2	103-Lincoln	10	M	230	50	23	C.	76	49	13	3	E	L	77
Luverne gfsl	7d-B-2	105-Lincoln	8	T	230	50	23	C.	71	45	14	3	E	L	75
Myatt sl, th.sur.ph.	M6a-A-1	111-Union	24	-	230	50	23	N.C.	73	38	13	3	E	M	84
Nacogdoches gfsl	6d-E-1	142-Bossier	6	M	230	47	24	N.C.	67	49	13	3	G	M	68
Natchitoches c	1f-D-1	69-Bienville	4	M	237	48	23	N.C.	50	40	10	3	G	M	56
Norfolk sl	7X-B-1	79-Sabine	12	M	230	47	23	N.C.	71	46	11	3	E	M	74
Norfolk sl	7X-B-1	200-Vernon	18	M	245	50	26	N.C.	76	42	14	3	F	L	82
Ora fsl	6-C-2	216-Bossier	8	M	230	47	24	C.	88	61	14	2	E	L	79
Ora fsl	6-C-2	143-Bossier	6	M	230	47	24	N.C.	82	50	14	3	E	L	82
Orangeburg sl	7-B-1	42-Grant	9	M	230	54	25	N.C.	79	55	12	3	E	H	76
Providence sil	6-B-1	184-Catahoula	5	M	230	58	25	N.C.	59	42	12	4	G	L	68
Ruston fsl	7-B-2	215-Bossier	6	M	230	47	24	C.	98	63	14	2	G	L	88
Ruston fsl	7-C-1	149-Bossier	12	M	230	47	24	C.	82	49	14	3	E	M	82
Ruston fsl	7-D-1	38-Claiborne	18	M	230	48	24	C.	84	51	14	3	E	M	83
Ruston fsl	7-B-1	172-Winn	5	T	230	50	24	N.C.	80	46	13	4	E	M	84
Ruston fsl	7-B-1	193-LaSalle	6	M	230	58	25	N.C.	66	38	13	3	E	L	77
Ruston fsl	7-B-1	150-Bossier	12	M	230	47	24	N.C.	74	46	13	4	E	M	77
Ruston fsl	7-B-2	101-Lincoln	8	M	230	50	23	N.C.	70	36	13	3	E	L	82
Ruston sl	7-B-1	84-Sabine	12	M	230	48	24	N.C.	66	33	11	3	E	L	82
Ruston sl	7-C-1	40-Grant	11	T	230	54	25	N.C.	69	52	12	3	E	L	68
Ruston sl	7-B-1	36-Grant	10	M	230	54	25	N.C.	78	46	14	3	G	M	81
Ruston sl	7-C-1	75-Sabine	15	M	230	46	22	N.C.	73	36	12	3	E	H	86
Ruston sl,th.sur.ph.	7X-B-1	214-Bossier	16	M	230	47	24	C.	95	54	15	2	E	L	91
Ruston sl,th.sur.ph.	7X-B-1	194-Vernon	12	M	245	50	26	N.C.	67	44	11	3	E	L	71
Ruston lfs	12-B-3	62-Bienville	5	B	237	48	23	N.C.	85	70	16	3	E	L	73
Ruston lfs	12-D-4	71-Bienville	5	M	237	48	24	C.	68	31	13	3	G	L	88
Ruston lfs,th.sur.ph.	12-B-1	203-Claiborne	26	M	230	48	24	N.C.	74	46	15	3	E	L	77
Ruston lfs,th.sur.ph.	12-C-2	205-Claiborne	22	M	230	48	24	N.C.	63	32		3			79
* Sarepta (Stough) sil	6a1-A-1	26-Webster	12	-	230	47	24	N.C.	87	48	14	4	G	L	87
Savannah fsl	6-C-2	148-Bossier	7	M	230	47	24	C.	72	51	14	3	E	M	71
Sawyer vfsl	5-B-1	65-Sabine	12	M	230	47	23	N.C.	67	45	13	2	G	M	70
Sawyer vfsl	5-B-1	161-Winn	6	T	230	52	24	N.C.	77	43	15	3	G	M	83
Shubuta vfsl	6-C-2	81-DeSoto	8	M	237	46	22	C.	68	34	12	3	G	L	83
Shubuta vfsl	6-B-1	79-DeSoto	10	B	237	46	22	N.C.	76	41	13	1	E	M	84
Shubuta fsl	6-B-1	68-Sabine	14	M	230	47	23	N.C.	65	41	13	4	G	M	72
Shubuta fsl	6-C-2	12-Webster	8	T	230	47	24	N.C.	67	44	14	1	G	L	72
Shubuta fsl	6-D-3	90-Lincoln	10	M	230	50	23	C.	72	47	13	3	E	L	74

M-32-FTW-59

APPENDIX TABLE 2 (Cont'd) -- Summary of Soil-Site Correlation Plot Data -- Shortleaf Pine

Soil Type	Mapping Symbol	Plot and Parish	Surface Thickness In.	Position on Slope	Frost-free Period Days	Annual Rainfall In.	Warm Season In.	Previous Land Use	Average Height Ft.	Average Age Yr.	Average DBH In.	Trees Measured No.	Stocking	Density Understory	Site Index
Shubuta fsl	6-D-3	211-Bienville	5	M	237	48	23	C.	59	32	13	3	G	L	75
Shubuta fsl	6-D-3	210-Webster	4	M	230	47	24	C.	65	33	12	3	G	L	80
Shubuta fsl	6-D-3	47-Claiborne	8	B	230	49	24	N.C.	59	32	13	2	G	O	75
Shubuta fsl	6-D-4	88-Lincoln	4	B	230	50	23	C.	80	49	16	3	E	L	81
Shubuta fsl	6-E-3	10-Webster	6	M	230	47	24	N.C.	75	50	12	3	E	L	75
Shubuta fsl	6-E-3	8-Webster	6	M	230	47	24	C.	69	39	13	3	E	L	78
Shubuta fsl	6-E-3	98-Jackson	10	M	237	50	23	C.	85	55	16	3			81
Shubuta fsl	6-B-2	208-Webster	6	M	230	47	24	N.C.	60	41	11	3	G	M	68
Shubuta fsl	6-B-2	217-Bossier	8	M	230	47	24	C.	81	61	13	4	E	L	73
Shubuta fsl	6-C-2	209-Webster	6	M	230	47	24	C.	81	48	13	3	G	L	82
Shubuta sl	6-C-1	103-Natchitoches	13	M	230	50	24	N.C.	72	57	13	3	E	L	67
Shubuta sl	6-B-1	71-Sabine	12	M	230	46	22	N.C.	73	44	12	3	E	H	78
Shubuta gfsl	6d-C-1	32-Webster	10	T	230	48	24	N.C.	55	41	13	1	G	M	60
Shubuta gfsl	6d-D-3	49-Claiborne	8	T	230	49	24	N.C.	55	33	13	3	G	L	69
Shubuta gfsl	6d-E-1	30-Webster	10	M	230	48	24	N.C.	66	61	12	2	E	M	59
Shubuta gfsl	6d-E-2	185-Bossier	6	M	230	47	24	N.C.	63	35	14	3	E	M	76
Shubuta gfsl	6d-F-1	187-Bossier	8	M	230	47	24	N.C.	65	43	11	3	E	M	70
Shubuta gfsl	6d-F-1	186-Bossier	8	M	230	47	24	N.C.	65	51	12	3	E	M	64
Shubuta gfsl	6d-B-1	93-Lincoln	10	T	230	50	23	C.	64	43	13	3	E	L	69
Shubuta gfsl	6d-C-1	43-Claiborne	24	T	230	49	24	N.C.	61	50	13	2	E	M	61
Shubuta gfsl	6d-C-1	35-Webster	10	T	230	48	24	N.C.	58	45	12	2	E	L	61
* Summerfield sil	5al-B-1	24-Grant	4	M	230	56	25	N.C.	69	45	12	3	E	M	73
* Summerfield vfsl	5al-B-1	123-Winn	10	M	230	54	24	N.C.	79	44	17	3	E	M	84
* Summerfield vfsl	5al-B-1	168-Winn	5	M	230	52	24	N.C.	73	43	13	3	G	M	78
* Summerfield vfsl	5al-B-1	86-DeSoto	12	-	237	46	22	N.C.	64	41	11	1	E	M	71
* Summerfield vfsl	5al-A-1	69-Sabine	12	-	230	47	23	N.C.	80	49	13	3	E	M	80
Sumter c	1f-D-3	117-Natchitoches	6	M	230	52	25	N.C.	46	54	10	3	F	O	44
Sumter c	1f-B-2	90-Natchitoches	4	M	230	52	25	N.C.	46	43	12	2	F	O	49
Susquehanna c	1-B-1	134-Jackson	2	M	237	50	23	N.C.	74	55	15	3	E	L	70
Susquehanna c	1-E-4	197-DeSoto	1	M	237	46	22	N.C.	56	46	11	3	E	L	58
Susquehanna vfsl	L5-B-3	179-Caddo	3	T	230	46	22	N.C.	43	29	12	3	G	L	57
Susquehanna vfsl	L5-B-1	205-Rapides	3	M	230	52	26	N.C.	56	36	13	3	F	O	67
Susquehanna fsl	L5-B-1	212-Bienville	5	M	237	48	23	N.C.	53	43	13	3	G	M	57
Susquehanna fsl	L5-E-2	198-DeSoto	4	M	237	46	22	N.C.	57	35	10	3	G	M	69
Susquehanna fsl	L5-B-1	67-Sabine	12	M	230	47	23	N.C.	57	44	12	3	G	M	60
Vaiden c	1-B-1	163-Winn	3	M	230	52	24	N.C.	63	51	12	3	G	M	62
Vaucluse sl	6-D-1	56-Claiborne	16	M	230	48	24	N.C.	79	58	15	4	E	M	73
Vaucluse sl	6-E-4	53-Claiborne	10	M	230	48	24	N.C.	53	31	11	3	G	L	69
Wrightsville sil	5a-A-1	159-Caddo	6	-	230	47	23	N.C.	61	45	12	4	G	L	64

* Tentative Series -- Those names in parentheses are the suggested names pending final correlation.

M-32-FTW-59

APPENDIX TABLE 3 -- Summary of Soil-Site Correlation Plot Data -- Longleaf Pine

Soil Type	Mapping Symbol	Plot and Parish	Surface Thickness In.	Position on Slope	Frost-free Period Days	Annual Rainfall In.	Warm Season In.	Previous Land Use	Average Height Ft.	Average Age Yr.	Average DBH In.	Trees Measured No.	Stocking	Density Understory	Site Index
Acadia sil	5al-B-1	171-Calcasieu	5	M	252	53	28	N.C.	54	31	11	3	F	L	72
Acadia vfsl	5al-B-1	55-Rapides	4	M	230	54	27	N.C.	52	33	11	4	G	O	66
Beauregard sil	6al-A-1	169-Beauregard	5	-	252	52	27	N.C.	54	32	13	3	F	L	70
Beauregard vfsl	6al-A-1	174-Calcasieu	5	-	252	53	28	N.C.	55	43	12	3	G	O	60
Bowie sil	6-B-1	1-Rapides	6	T	230	56	26	N.C.	74	44	13	3	E	L	78
Bowie vfsl	6-A-1	144-Beauregard	6	-	252	52	27	N.C.	65	36	13	3	G	O	77
Bowie vfsl	6-A-1	145-Beauregard	6	-	252	52	26	N.C.	62	34	12	3	G	L	77
Bowie vfsl	6-B-1	157-Allen	6	M	245	54	27	N.C.	53	35	11	3	F	L	66
Bowie vfsl	6-B-1	172-Calcasieu	6	M	252	53	28	N.C.	51	31	11	3	E	O	67
Bowie vfsl	6-B-1	131-Vernon	6	M	245	52	27	N.C.	68	40	12	3	E	O	76
Bowie vfsl	6-B-1	5-Rapides	6	M	230	56	26	N.C.	76	44	11	3	G	M	81
Bowie vfsl	6-B-1	19-Grant	6	M	230	56	25	N.C.	68	39	11	3	E	O	77
Bowie vfsl	6-B-1	6-Rapides	6	M	230	56	26	N.C.	62	43	12	3	E	O	67
Bowie vfsl	6-C-1	138-Beauregard	12	M	252	52	27	N.C.	75	43	12	3	E	O	81
Bowie vfsl	6-C-1	7-Rapides	6	T	230	57	26	N.C.	66	44	12	3	G	O	71
Bowie fsl	6-B-1	95-Natchitoches	7	M	230	50	24	N.C.	56	38	12	3	F	L	65
Bowie fsl	6-F-2	152-Beauregard	4	M	252	52	26	N.C.	81	68	13	3	E	L	70
Bowie fsl	6-B-1	146-Beauregard	8	M	252	52	26	N.C.	65	45	11	3	G	O	69
Caddo vfsl	6a-A-1	153-Beauregard	5	-	252	52	26	N.C.	79	60	11	3	E	O	72
Caddo vfsl	6a-B-1	141-Beauregard	6	M	252	52	27	N.C.	69	46	13	4	F	O	72
Caddo vfsl	6a-A-1	150-Beauregard	5	-	252	52	26	N.C.	61	50	10	3	G	L	61
Eustis lfs	13-B-1	195-Vernon	15	M	245	50	26	N.C.	55	32	12	3	F	O	71
Eustis lfs	13-B-1	197-Vernon	15	M	245	50	26	N.C.	53	33	11	3	E	O	67
Eustis lfs	13-B-1	198-Vernon	16	M	245	50	26	N.C.	56	33	12	3	G	O	71
Kalmia vfsl	7-A-1	122-Allen	10	-	245	55	27	N.C.	72	51	12	3	G	L	71
Kisatchie soils	25-G-3	210-Natchitoches	2	M	230	50	24	N.C.	42	34	10	3	F	L	53
Lexington sil	6-B-1	185-LaSalle	5	M	230	58	25	N.C.	58	32	14	3	F	L	75
Norfolk sl	7X-B-1	15-Grant	6	M	230	56	25	N.C.	72	36	12	3	E	O	86
Norfolk sl	7X-B-1	14-Grant	6	M	230	56	25	N.C.	63	36	10	3	E	O	76
Orangeburg sl	7-C-1	20-Grant	5	T	230	56	25	N.C.	67	40	11	3	E	O	75
Orangeburg lfs	12-E-2	196-Vernon	5	M	245	50	26	N.C.	54	33	11	3	E	O	68
Ruston vfsl	7-B-1	139-Calcasieu	13	T	252	53	28	N.C.	58	40	12	3	G	O	65
Ruston vfsl	7-B-1	142-Beauregard	14	M	252	52	27	N.C.	66	38	13	4	E	O	76
Ruston vfsl	7-B-1	58-LaSalle	7	T	230	57	25	N.C.	66	44	15	3	F	L	70
Ruston fsl	7-E-1	16-Grant	7	M	230	56	25	N.C.	66	36	12	3	E	L	79
Ruston fsl	7-F-1	38-Grant	6	M	230	56	25	N.C.	73	40	12	3	E	L	82
Ruston fsl	7-A-1	143-Beauregard	14	-	252	52	27	N.C.	59	36	12	3	G	O	71
Ruston fsl	7-B-1	125-Allen	8	M	245	55	27	N.C.	70	37	14	3	G	L	82

M-32-FtW-59

APPENDIX TABLE 3 (Cont'd) -- Summary of Soil-Site Correlation Plot Data -- Longleaf Pine

Soil Type	Mapping Symbol	Plot and Parish	Surface Thickness In.	Position on Slope	Frost-free Period Days	Annual Rainfall In.	Warm Season In.	Previous Land Use	Average Height Ft.	Average Age Yr.	Average DBH In.	Trees Measured No.	Stocking	Density Understory	Site Index
Ruston fsl	7-B-1	136-Vernon	13	M	245	52	27	N.C.	60	38	12	3	G	0	70
Ruston fsl	7-B-1	190-LaSalle	7	M	230	58	25	N.C.	61	33	10	3	E	L	78
Ruston fsl	7-C-1	52-Rapides	9	T	230	56	26	N.C.	73	51	13	3	E	0	72
Ruston sl	7-B-1	132-Vernon	11	M	245	52	27	N.C.	56	38	12	3	G	0	65
Ruston sl	7-B-1	96-Natchitoches	14	M	230	50	24	N.C.	63	44	11	3	E	0	67
Ruston sl	7-B-1	35-Grant	9	M	230	54	25	N.C.	68	43	13	3	G	L	74
Ruston sl	7-B-1	22-Grant	6	M	230	56	25	N.C.	65	44	12	3	E	L	69
Ruston sl	7-E-1	13-Rapides	14	M	230	57	26	N.C.	64	38	13	3	F	L	74
Ruston lfs,th.sur.ph.	12-B-1	147-Beauregard	24	M	252	52	26	N.C.	64	40	13	3	G	0	72
Shubuta sl,th.sur.ph.	6-E-2	105-Natchitoches	20	M	230	50	24	N.C.	67	44	11	3	E	0	72
Sumter c	1f-B-1	91-Natchitoches	4	M	230	52	25	N.C.	47	50	12	3	F	0	47
Susquehanna c	1-B-1	204-Rapides	2	M	230	52	26	N.C.	47	33	10	3	F	0	60
Susquehanna vfsl	L5-C-1	208-Natchitoches	7	M	230	50	24	N.C.	70	51	12	3	G	M	69

M-32-FtW-59

APPENDIX TABLE 4 -- Summary of Soil-Site Correlation Plot Data -- Slash Pine

Soil Type	Mapping Symbol	Plot and Parish	Surface Thickness In.	Position on Slope	Frost-free Period Days	Annual Rainfall In.	Warm Season In.	Previous Land Use	Average Height Ft.	Average Age Yr.	Average DBH In.	Trees Measured No.	Stocking	Density Understory	Site Index
Acadia sil	5a1-A-1	160-Allen	5	-	245	54	27	N.C.	56	28	11	3	E	L	74
Beauregard sil	6a1-A-1	168-Beauregard	5	-	252	54	27	N.C.	70	26	11	3	E	L	97
Beauregard sil	6a1-A-1	155-Rapides	6	-	230	54	26	N.C.	62	21	11	3	E	L	97
Bowie sil	6-B-1	159-Allen	8	M	245	54	27	N.C.	51	20	9	3	E	L	85
Bowie vfsl	6-A-1	166-Beauregard	6	-	252	54	27	N.C.	71	27	12	3	E	L	96
Bowie vfsl	6-B-1	162-Allen	6	M	245	54	27	N.C.	66	23	11	3	E	L	98
Bowie vfsl	6-B-1	161-Allen	6	M	245	54	27	N.C.	74	28	14	3	E	L	97
Bowie vfsl	6-B-1	158-Allen	8	M	245	54	27	N.C.	56	21	10	3	E	O	90
Caddo sil	6a-A-1	165-Allen	6	-	245	54	28	N.C.	65	27	11	3	E	L	88
Caddo sil	6a-A-1	167-Beauregard	5	-	252	54	27	N.C.	62	26	12	3	F	L	87
Sawyer sil	5-C-1	154-Rapides	6	M	230	56	26	N.C.	63	27	12	3	E	L	86
Wet Alluvial land	33-A-1	163-Allen		-	245	54	27	N.C.	69	23	11	3	E	L	101
Wet Alluvial land	33-A-1	164-Allen		-	245	54	27	N.C.	68	23	11	3	E	L	100

M-32-FtW-59

POTENTIAL SOIL PRODUCTIVITY. Average site index for each adapted forest species or type (woodcrop) is accepted as the best indicator of potential soil productivity. Site index is determined by measuring the total age and total height of a number of dominant and codominant trees in a well-stocked, even-aged, and otherwise qualifying stand on the soil being investigated. The measurements are averaged and the site index read from published curves. A number of such measurements are needed to obtain a reliable average for each soil. Site index for these species is the average total height of the dominant and codominant trees at 50 years of age. Quantitative predictions of potential yield are obtained for different site index classes by reference to published yield tables.

SEEDLING MORTALITY (Regeneration). This is the normal expected degree of mortality of naturally occurring or planted tree seedlings as influenced by kinds of soil in the first few years of growth. For plantations, it assumes use of planting stock of proper grade, in a healthy condition when planted, and proper planting. For naturally occurring seedlings it assumes an adequate seed supply. For both natural and planted seedlings it assumes: the area to be free of pests (town ant and gophers); plant competition (undesirable species) controlled; and other environmental factors for the area to be normal. The rating classes are:

1. Slight -- No special regeneration problem. Ordinary losses expected because of soil influences should not be over 25% of planted stock; satisfactory re-stocking by initial planting can be expected 4 out of 5 years. This is considered a high order of probability requiring replanting only during unfavorable years. Ordinarily, adequate natural regeneration will take place under appropriate silvicultural conditions.

2. Moderate -- Moderate regeneration problem. Expected losses due to soil influences would ordinarily be between 25 to 50%. Satisfactory restocking by initial planting could be expected 3 years out of 5, but some replanting may be necessary to fill in openings even during years of greatest success. Some seedbed preparation may be advisable to assure a higher probability of adequate and immediate restocking by initial planting. Natural regeneration cannot always be relied upon and special treatment measures may be advisable to assure adequate and immediate restocking.

3. Severe -- Difficult regeneration problem. Natural regeneration cannot be relied upon. Expected losses due to soil influences ordinarily are over 50% for planted stock. Satisfactory restocking by initial planting can be expected only about 2 years out of 5. Arrangements for replanting to fill in important openings and to replant areas of near or complete failure need to be

M-32-FTW-59

considered in planning. Special seedbed preparation and superior planting techniques are advisable to assure adequate and immediate restocking of these soils.

PLANT COMPETITION (Brush Encroachment). This is the degree of competition and rate that undesirable species invade different soils when adequate sources of invaders are present. These rating classes do not apply to a soil when undesirable sources of competition have been removed by clearing, fire, girdling, poisoning, etc. The rating classes are:

1. Slight -- No special plant competition problems. Kinds of soil are such that invasion by undesirable species will only slightly impede natural regeneration and growth of the designated species.

2. Moderate -- Moderate plant competition problem. Competition develops on these soils but will not ordinarily prevent adequate stand establishment of the designated species. Establishment may be delayed and initial growth rate slowed, thereby delaying the development of a normal full-stocked stand. Some site preparation may be necessary in order to establish an adequate stand without delay.

3. Severe -- Plant competition is a severe problem. Plant competition is so severe on these soils that natural regeneration cannot be relied upon to provide adequate restocking of designated species. Special management and site preparation treatments are necessary such as land clearing, controlled burning, using chemical sprays, tree planting with replanting as needed, etc., to assure fully stocked stands.

EQUIPMENT LIMITATIONS (Trafficability). These are the soil characteristics and topographic features that restrict or prohibit the use of equipment commonly used in planting operations, crop tending, and tree harvesting. Wetness is by far the dominant factor. Problems may be seasonal or year long. This is a general guide since types of equipment used in woodland operations and weather are variable. The rating classes are:

1. Slight -- No special equipment limitations exist. Equipment use is generally not restricted in kind or time of year.

2. Moderate -- Moderate equipment limitations exist. Type of equipment is only moderately limited due to soil or slope of land. There may be a seasonal restriction (less than 3 months) in use of equipment. Use of equipment during the restrictive period may damage soil structure and stability and injure tree roots.

3. Severe -- Serious equipment limitations exist. Type of equipment is severely limited due to soil or slope of land.

M-32-FTW-59

Equipment use may be restricted in the aggregate throughout the year or during a continuous period greater than 3 months. Equipment use during restrictive periods may cause severe damage to tree roots, soil structure and stability.

EROSION HAZARD. This is the erosion hazard of the soil when the area is managed according to currently recognized acceptable standards. The rating classes are:

1. Slight -- Erosion hazard is none too slight. No special techniques in management or special attention to road, skid trails, fire lanes, and landing construction and maintenance are necessary to prevent erosion.

2. Moderate -- Erosion hazard is moderate. Some provision in management must be made to prevent erosion. Roads, skid trails, fire lanes, and landing construction and maintenance require some special techniques.

3. Severe -- Severe erosion hazard. Special techniques in management and special attention to road, skid trail, fire lane, and landing construction and maintenance are necessary to prevent erosion.

HAZARDS FROM FOREST PESTS. This is the expected damage and/or mortality of stands due to pests such as the Texas leaf cutting (town) ant and gophers that are associated with certain soils and in only certain localities on these particular soils. The rating classes are:

1. Slight -- Expected mortality and/or damage from forest pests is slight.

2. Moderate -- Moderate mortality and/or damage can be expected from forest pests. Some replanting and/or pest control may be necessary to assure fully stocked conditions.

3. Severe -- Severe mortality and/or damage can be expected from forest pests. Pest control is necessary before planting. Complete replanting may be necessary if pests are not controlled.

APPENDIX TABLE 5 - Soils Grouped by Important Characteristics to Extrapolate Measured Site Index Values by Species To All Soil Mapping Units in the Forested Coastal Plain Area

Description of Soil Group	Soil Unit Symbol 1/	Representative Soils Sampled in the Group	Number of Samples			Aver. Site Index 2/		
			Lob.	Short.	Long.	Lob.& Slash	Short.	Long.
Alkaline clay textured soils	1f	Morse clay	0	0	0	59	50	47
		Natchitoches clay	1	1	0			
		Sumter clay	4	2	1			
Alkaline clay textured soils (dark)	01f	Binnsville clay	4	0	0	59	** 50	** 47
		Houston Black clay	0	0	0			
Acid clay textured soils	1	*Gore clay	0	0	0	75	63	60
		*McKamie clay	0	0	0			
		Susquehanna clay	2	2	1			
		Vaiden clay	2	1	0			
Acid clay textured soils (dark)	01	Hunt clay	1	0	0	78	** 63	** 60
Medium textured, very slowly permeable, poorly drained soils	5a	*Mashulaville silt loam	3	0	0	76	64	-
		*Mashulaville very fine sandy loam	1	0	0			
		Myatt silt loam	5	0	0			
		*Oberlin silt loam	1	0	0			
		Wrightsville silty clay	1	0	0			
		Wrightsville silt loam	5	1	0			
Medium textured, very slowly permeable, imperfectly drained soils	5a1	Acadia silt loam	0	1	1	78	76	69
		Acadia very fine sandy loam	0	0	1			
		*Almont (Acadia) silt loam	3	3	0			
		Pheba very fine sandy loam	1	0	0			
		*Summerfield silt loam	2	1	0			
		*Summerfield very fine sandy loam	5	4	0			
		*Summerfield sandy loam	1	0	0			
Thin surface, medium textured, very slowly permeable, well drained soils	L5	Cuthbert fine sandy loam	3	0	0	74	63	** 60
		*Gore silt loam	2	1	0			
		*Gore very fine sandy loam	3	2	0			
		Susquehanna silty clay loam	1	0	0			
		Susquehanna silt loam	2	0	0			
		Susquehanna very fine sandy loam	4	2	1			
		Susquehanna fine sandy loam	3	3	0			

M-32-FTW-59

APPENDIX TABLE 5 - Soils Grouped by Important Characteristics to Extrapolate Measured Site Index Values by Species To All Soil Mapping Units in the Forested Coastal Plain Area (Cont'd)

Description of Soil Group	Soil Unit Symbol 1/	Representative Soils Sampled in the Group	Number of Samples			Aver. Site Index 2/		
			Lob.	Short.	Long.	Lob.& Slash	Short.	Long.
Medium textured, very slowly permeable, well drained soil	5	Boswell very fine sandy loam	5	4	0	78	75	**
		Boswell fine sandy loam	1	0	0			
		Hortman very fine sandy loam	1	0	0			
		*McKamie very fine sandy loam	0	0	0			65
		Muskogee very fine sandy loam	0	0	0			
		Sawyer very fine sandy loam	3	2	0			
		Sawyer fine sandy loam	3	0	0			
Gravelly surface, very slowly permeable, well drained soils	5d	Boswell gravelly fine sandy loam	1	1	0	** 70	60	-
Medium textured, slowly permeable, poorly drained soils	6a	Caddo silt loam	2	1	0	82	76	68
		Caddo very fine sandy loam	4	0	3			
Thick surface, medium textured, slowly permeable, imperfectly drained soils	M6a	Caddo silt loam, depression phase	2	0	0	95	84	-
		Myatt silt loam, thick surface phase	2	1	0			
Medium textured, slowly permeable, imperfectly drained soils	6a1	*Sarepta (Stough) silt loam	1	1	0	91	84	65
		Stough silt loam	3	0	0			
		Stough very fine sandy loam	4	0	0			
		Beauregard silt loam	4	0	1			
		Beauregard very fine sandy loam	8	2	1			
		Prentiss very fine sandy loam	0	0	0			
Medium textured, slowly permeable, well drained soils	6	Bowie silt loam	3	0	1	83	76	73
		Bowie very fine sandy loam	1	1	10			
		Bowie fine sandy loam	0	2	3			
		Bowie sandy loam	0	1	0			
		Gilead sandy loam	1	0	0			
		Kirvin fine sandy loam	0	1	0			
		Kirvin sandy loam	1	0	0			
		Lexington silt loam	1	2	1			
		Ora fine sandy loam	1	2	0			
		Ora sandy loam	1	0	0			
		Ora sandy loam, thick surface phase	1	0	0			
		Providence silt loam	1	1	0			
		Ruston fine sandy loam, hvy. sub. phase	4	0	0			
		Savannah fine sandy loam	1	1	0			
		Shubuta very fine sandy loam	2	2	0			
		Shubuta fine sandy loam	11	12	0			

M-32-FTW-59

APPENDIX TABLE 5 (Cont'd) - Soils Grouped by Important Characteristics to Extrapolate Measured Site Index Values by Species To All Soil Mapping Units in the Forested Coastal Plain Area

Description of Soil Group	Soil Unit Symbol 1/	Representative Soils Sampled in the Group	Number of Samples			Aver. Site Index 2/		
			Lob.	Short.	Long.	Lob.& Slash	Short.	Long.
(Cont'd)	(6)	Shubuta sandy loam	1	1	0			
		Shubuta sandy loam, thick surface phase	0	0	1			
		Tilden fine sandy loam	0	0	0			
		Vaucluse sandy loam	0	2	0			
Gravelly surface, slowly permeable, well drained soils	6d	Kirvin gravelly fine sandy loam	1	2	0			
		Nacogdoches gravelly fine sandy loam	1	0	0	76	66	-
		Shubuta gravelly fine sandy loam	3	9	0			
Medium textured, moderately permeable, well drained soils	7	Cahaba fine sandy loam	3	0	0			
		Dougherty fine sandy loam	2	2	0			
		Kalmia very fine sandy loam	2	0	1			
		Kalmia fine sandy loam	1	2	0			
		Luverne fine sandy loam	0	0	0			
		Orangeburg fine sandy loam	1	0	0	88	80	73
		Orangeburg sandy loam	0	1	1			
		*Red Bayou (Cahaba) fine sandy loam	1	0	0			
		Ruston very fine sandy loam	0	0	3			
		Ruston fine sandy loam	7	7	6			
		Ruston sandy loam	7	4	5			
		*Vian (Cahaba) fine sandy loam	2	0	0			
Gravelly surface, moderately permeable, well drained soils	7d	Luverne gravelly fine sandy loam	0	2	0	**		
		Ruston gravelly fine sandy loam	0	0	0	85	76	-
Medium textured, rapidly permeable, well drained soils	7X	Cahaba sandy loam	2	1	0			
		Norfolk sandy loam	3	2	2			
		Ruston sandy loam, thick surface phase	2	2	0	95	79	81
		*Vian (Cahaba) sandy loam	1	0	0			
Medium textured, poorly drained, bottomland, subject to overflow	8ab	Bibb silt loam, overflow phase	1	0	0	100	-	-
Medium textured, imperfectly drained bottomland, subject to overflow	8alb 9alb	Iuka silt loam, overflow phase	2	0	0			
		Iuka very fine sandy loam, overflow phase	1	0	0			
		Iuka sandy loam, overflow phase	1	0	0	101	-	-
		Mantachie silt loam, overflow phase	1	0	0			
		Mantachie very fine sandy loam, overflow phase	1	0	0			

M-32-FTW-59

APPENDIX TABLE 5 (Cont'd) - Soils Grouped by Important Characteristics to Extrapolate Measured Site Index Values by Species To All Soil Mapping Units in the Forested Coastal Plain Area

Description of Soil Group	Soil Unit Symbol 1/	Representative Soils Sampled in the Group	Number of Samples			Aver. Site Index 2/		
			Lob.	Short.	Long.	Lob.& Slash	Short.	Long.
Medium textured, moderately well drained bottomland, subject to overflow	8b 9b	Hannahatchie fine sandy loam, overflow phase Ochlockonee silt loam, overflow phase Ochlockonee very fine sandy loam, overflow phase Ochlockonee fine sandy loam, overflow phase	0 1 2 4	0 0 0 0	0 0 0 0	103	-	-
Medium textured, poorly drained bottomland soils	8a	Bibb silt loam	0	0	0	** 100		
Medium textured, imperfectly drained bottomland soils	8a1 9a1	Iuka silt loam Iuka very fine sandy loam Mantachie silt loam Mantachie very fine sandy loam	0 0 0 0	0 0 0 0	0 0 0 0	** 103		
Medium textured, well drained bottomland soils	8 9	Hannahatchie fine sandy loam Ochlockonee very fine sandy loam Ochlockonee fine sandy loam	0 0 0	0 0 0	0 0 0	** 105		
Coarse textured, very slowly permeable, imperfectly drained soils	10a1	*Summerfield loamy fine sand	1	0	0	85	** 75	** 65
Coarse textured, slowly permeable, imperfectly drained soils	11a1	Beauregard loamy fine sand	1	0	0	** 90	** 80	** 65
Coarse textured, very slowly permeable, well drained soils	10	Sawyer loamy fine sand	0	0	0	** 78	** 75	** 65
Coarse textured, slowly permeable, well drained soils	11	Gilead loamy fine sand Vaucluse loamy fine sand	0 0	0 0	0 0	** 83	** 76	-
Coarse textured, moderately permeable, well drained soils	12	Orangeburg loamy fine sand Ruston loamy fine sand Ruston loamy fine sand, thick surface ph.	2 6 0	0 2 2	1 0 1	91	77	70
Coarse textured, rapidly permeable, well drained soils	13	Eustis loamy fine sand Independence loamy fine sand Lakeland loamy fine sand	2 0 3	2 0 2	3 0 0	81	81	70
Very coarse textured, very rapidly permeable, excessively drained soils	130	Lakeland loamy sand	3	4	0	72	68	** 60
Fine textured, very shallow soils	24	*Kisatchie clay	1	0	0	62	** 55	** 50

M-32-FtW-59

APPENDIX TABLE 5 (Cont'd) - Soils Grouped by Important Characteristics to Extrapolate Measured Site Index Values by Species To All Soil Mapping Units in the Forested Coastal Plain Area

Description of Soil Group	Soil Unit Symbol 1/	Representative Soils Sampled in the Group	Number of Samples			Aver. Site Index 2/		
			Lob.	Short.	Long.	Lob.& Slash	Short.	Long.
Medium textured, very shallow soils	25	*Kisatchie soils	2	0	1	58	** 55	53
Local alluvium, poorly drained	33	Wet Alluvial land	4	0	0	101	-	-

1/ Conservation survey soil mapping unit symbol -- Includes all slopes and erosion phases.

2/ Average site index of samples measured. Data from Appendix Tables 1, 2 and 3. Where there were no measured samples for a particular species on a group of soils, an average site index value has been assigned on the basis of measurements on other soils and knowledge of the comparative growth relationships among species. These assigned values are identified by asterisks (**). Values obtained for loblolly pine are used to represent those for slash pine -- see text.

* Tentative soil series - those names in parentheses are the suggested names pending final correlation.

** See footnote 2/ above.

\- Species not generally found on these soils.

M-32-FTW-59

APPENDIX TABLE 6 (Cont'd) - Average Stand and Yield Information for Well-Stocked, Unmanaged, Naturally Occurring Stands (From U.S.D.A. Misc. Pub. 50)

LONGLEAF PINE

Site Index	Age	Total Volume Per Acre			Height Dom. Stand	Aver. Diam. Total Stand	Total Trees Per Acre
	Years	Cu.Ft.	Cords	Bd.Ft. 1/	Feet	Inches	Number
50	20	1000	4	-	26	2.8	1410
	30	1450	11	-	37	4.1	900
	40	1850	17	-	45	5.1	625
	50	2250	21	500	50	5.9	505
	60	2600	25	1000	55	6.6	430
	70	2950	28	2000	58	7.2	375
	80	3200	31	2500	61	7.8	335
60	20	1500	8	-	31	3.3	1290
	30	2200	19	-	44	4.9	815
	40	2900	27	500	53	6.0	575
	50	3550	34	2000	60	7.0	465
	60	4100	40	3500	65	7.8	395
	70	4600	45	5000	70	8.5	345
	80	4950	49	7000	73	9.1	305
70	20	2000	14	-	36	3.8	1150
	30	3000	28	-	52	5.5	730
	40	3950	39	2000	62	6.8	515
	50	4800	48	4500	70	7.9	415
	60	5600	55	7000	77	8.8	355
	70	6200	62	9500	82	9.6	305
	80	6800	67	12500	86	10.3	270
80	20	2450	20	-	41	4.3	1050
	30	3700	36	1000	59	6.1	655
	40	4900	49	4000	71	7.6	465
	50	6000	61	7500	80	8.8	375
	60	7000	70	11500	87	9.8	315
	70	7850	78	15500	93	10.6	270
	80	8550	85	19500	98	11.5	240
90	20	2800	26	-	46	4.7	910
	30	4350	43	2000	66	6.7	575
	40	5800	59	6500	80	8.3	405
	50	7150	72	11500	90	9.6	330
	60	8350	84	17000	98	10.7	275
	70	9400	94	22500	105	11.6	240
	80	10250	103	27500	110	12.5	210

1/ Doyle Scale

M-32-FTW-59

APPENDIX TABLE 6 (Cont'd) - Average Stand and Yield Information for Well-Stocked, Unmanaged, Naturally Occurring Stands (From U.S.D.A. Misc. Pub. 50)

SLASH PINE

Site Index	Age	Total Volume Per Acre			Height Dom. Stand	Aver. Diam. Total Stand	Total Trees Per Acre
	Years	Cu.Ft.	Cords	Bd.Ft. 1/	Feet	Inches	Number
60	20	2700	20	-	36	3.5	2035
	30	3500	32	-	48	5.0	1140
	40	4150	40	500	55	6.3	710
	50	4600	45	2000	60	7.2	550
	60	4900	48	3500	64	7.9	470
70	20	3250	28	-	42	4.2	1445
	30	4250	40	500	56	6.0	820
	40	5000	49	2500	64	7.5	500
	50	5650	55	5500	70	8.5	390
	60	6100	59	7500	74	9.4	335
80	20	3800	35	-	48	4.9	1090
	30	4950	48	1500	63	7.0	610
	40	5850	58	6000	73	8.7	380
	50	6600	65	10000	80	10.0	295
	60	7150	69	12500	85	10.8	250
90	20	4250	41	-	54	5.6	835
	30	5550	54	4000	71	8.0	470
	40	6650	66	10000	83	10.0	295
	50	7500	73	15000	90	11.4	220
	60	8100	78	18000	95	12.5	195
100	20	4650	46	1000	61	6.4	625
	30	6100	59	7000	79	9.1	365
	40	7350	72	14500	92	11.4	225
	50	8300	81	19500	100	13.1	175
	60	8950	86	23000	106	14.2	150

1/ Doyle Scale

M-32-FTW-59

APPENDIX TABLE 6 - Average Stand and Yield Information for Well-Stocked, Unmanaged, Naturally Occurring Stands (From U.S.D.A. Misc. Pub. 50)

LOBLOLLY PINE

Site Index	Age	Total Volume Per Acre			Height Dom. Stand 1/	Aver. Diam. Total Stand	Total Trees Per Acre
	Years	Cu.Ft.	Cords	Bd.Ft. 2/	Feet	Inches	Number
	20	1500	12	-	35	3.6	1600
	30	2750	25	-	48	5.4	850
	40	3700	35	1000	55	6.8	585
60	50	4300	41	3000	60	7.9	440
	60	4700	46	5000	64	8.9	360
	70	5000	49	7000	67	9.7	310
	80	5200	51	8500	69	10.4	275
	20	1900	17	-	42	4.3	1185
	30	3350	31	1000	55	6.5	640
	40	4500	42	3500	64	8.1	435
70	50	5200	50	6500	70	9.4	325
	60	5700	55	10000	75	10.6	270
	70	6000	59	12500	78	11.5	230
	80	6200	62	15000	80	12.3	205
	20	2350	22	-	48	5.0	950
	30	4000	38	2000	63	7.4	510
	40	5300	51	6000	73	9.2	345
80	50	6150	60	11500	80	10.7	255
	60	6650	66	16000	85	12.0	210
	70	7000	70	19500	89	13.1	185
	80	7300	73	22000	92	14.0	160
	20	2850	27	-	54	5.6	790
	30	4700	46	4000	71	8.2	420
	40	6200	61	10000	82	10.2	290
90	50	7200	71	16500	90	12.0	220
	60	7800	78	22000	96	13.4	180
	70	8200	82	26000	100	14.6	150
	80	8550	85	29000	103	15.6	135
	20	3300	32	500	59	6.1	690
	30	5400	53	6000	78	9.0	375
	40	7150	71	14500	91	11.2	255
100	50	8400	84	23000	100	13.1	190
	60	9150	92	29500	107	14.6	155
	70	9600	96	33000	112	15.9	135
	80	9950	100	35500	115	17.1	115
	20	3850	37	1000	65	6.6	615
	30	6200	62	9000	85	9.7	335
	40	8200	82	20000	100	12.1	225
110	50	9650	96	29500	110	14.1	170
	60	10550	106	36500	118	15.9	140
	70	11150	112	40500	122	17.3	120
	80	11500	116	43500	126	18.4	105

1/ Height Dominant Stand revised according to Coile and Schumacher 1953.

2/ Doyle Scale.

M-32-FTW-59

APPENDIX TABLE 6 (Cont'd) - Average Stand and Yield Information for Well-Stocked, Unmanaged, Naturally Occurring Stands (From U.S.D.A. Misc. Pub. 50)

SHORTLEAF PINE

Site Index	Age	Total Volume Per Acre			Height Dom. Stand 1/	Aver. Diam. Total Stand	Total Trees Per Acre
	Years	Cu.Ft.	Cords	Bd.Ft. 2/	Feet	Inches	Number
	20	1350	-	-	32	2.5	3425
	30	2460	23	-	39	3.9	1855
	40	3390	33	-	46	5.1	1085
50	50	4070	43	1600	50	6.1	760
	60	4500	48	3200	55	6.9	590
	70	4820	51	5050	59	7.6	485
	80	5090	53	7000	62	8.3	420
	20	1720	12	-	37	2.9	2520
	30	3140	32	-	47	4.6	1370
	40	4300	46	1550	54	6.0	815
60	50	5150	54	4350	60	7.2	570
	60	5720	60	7600	66	8.2	445
	70	6180	65	10250	71	9.0	370
	80	6530	68	12700	74	9.8	315
	20	2120	18	-	43	3.5	1965
	30	3900	41	750	53	5.4	1060
	40	5290	56	4000	62	7.0	625
70	50	6300	66	8650	70	8.3	440
	60	7030	73	12600	77	9.4	345
	70	7600	79	16250	82	10.4	285
	80	8030	83	19400	86	11.2	240
	20	2540	25	-	50	4.1	1495
	30	4510	48	1950	62	6.2	815
	40	6150	65	7650	72	8.0	485
80	50	7400	77	13550	80	9.5	335
	60	8270	85	18850	88	10.8	260
	70	8930	92	23450	94	11.9	215
	80	9480	97	27550	99	12.9	185
	20	2820	30	-	56	5.0	1080
	30	5120	54	4550	70	7.3	590
	40	7050	73	12600	81	9.4	345
90	50	8490	87	20450	90	11.2	245
	60	9510	98	27400	99	12.8	185
	70	10300	105	32850	106	14.1	160
	80	10920	112	37400	111	15.3	140

1/ Height Dominant Stand revised according to Coile and Schumacher 1953.

2/ Doyle Scale.

M-32-FTW-59